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PRELIMINARY REPORT OF THE SPECIAL OTTER TAIL COUNTY TUBERCULOSIS SURVEY*

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THE major field project of the Otter Tail County Sanatorium in 1939 was the Mantoux testing of the high school students of the county. During the year, 1,416 school children from the seventh through twelfth grades were Mantoux tested. A total of 124 children who reacted positively were x-rayed, and those children known to have a positive Mantoux from previous surveys and still in school were re-x-rayed. No cases of tuberculosis requiring treatment were found. It is the writer's conception that a sanatorium is not only a hospital for the care of a limited number of patients, but it should be an institution whose function is the control of tuberculosis in the area which it serves. In the control of tuberculosis, it must not only treat tuberculous individuals in an attempt to get them well, it must prevent the development of tuberculosis which, as in other diseases, is the goal to be attained. Tuberculosis being a contagious disease, there is only one way of preventing it, and that is by the discovery and isolation of every active open case. In 1939 the sanatorium had not accomplished its function, the major field project had been high school Mantoux surveys, and with these surveys not a single case of tuberculosis had been discovered.

An analysis was made of the Sanatorium admissions for the year 1939. Of the seventeen admissions which were cases previously unreported, twelve, or 70 per cent, were classified as far advanced, four, or 23 per cent, as moderately advanced, and only one as in the minimal stage. Obviously those with far and moderately advanced disease had had tuberculosis for some time and a different case finding program might have found some of them in an earlier stage. On further analysis of all the Sanatorium admissions for the year 1939, a total of 33 patients, sixteen, or 48 per cent, were found to be individuals who had been previously treated in tuberculosis sanatoria in whom the disease had again become active; and eleven others, or 33 per cent, gave a history of tuberculosis having existed at some previous time in some member of the immediate family. These two groups totaled 81 per cent of the admissions for the year. If the disease had again become active in some former patients, was it not possible that it had become active in others who had not come up for examination? If members of the immediate families of some of the old cases of tuberculosis were now developing tuberculosis, was it not possible that members of the immediate families of other old cases were also developing tuberculosis? It appeared that making the examination of reported cases and their families, the only project in field work for 1940 would reveal not only cases of active open tuberculosis, but also cases of tuberculosis in minimal stages even before symptoms became apparent, thus detecting and making possible the healing of incipient cases of tuberculosis before they became infectious.

To examine old cases and their families is not a new method of case finding. The Sanatorium in Otter Tail County has always carried on such a program as part of its field work. The only

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change proposed was that all the available time and funds, both of which were very limited, be devoted to this one project.

Dr. H. G. Lampson,[4] reported in 1915 that:

1. "A very large percentage, 79 per cent, of the individuals fully exposed for a long period of time to open cases of tuberculosis became infected.
2. "A much smaller percentage, 28 per cent, of those partially exposed or exposed for a short period of time became infected.
3. "The percentage of infections from casual exposure, such as everyone encounters, was small—8 per cent.
4. "The more frequent infections of children may be explained, at least in part, by their more intimate contact with the patient.
5. "At all ages the intimacy and length of exposure are the determining factors in infection with tuberculosis."

Dr. David Zachs[7] found that two out of every three children who exhibit grave tuberculous lesions of the adult type came from families that show a tuberculosis morbidity of 41.7 per cent and a case mortality of 49.1 per cent, and he concluded that "these considerations point to the family relationship as a source of greatest danger in childhood and youth." H. R. Edwards[2] states: "The examination of the exposed contacts to tuberculosis should logically reveal more new tuberculosis than the examination of any other group, and experience everywhere confirms this if the source case has been known to have bacilli in the sputum. . . . The adult contact is more likely to reveal new manifest disease than the child." In mass surveys carried on under his direction since 1933 in the City of New York, 162,446 individuals from fifteen population groups were x-rayed and 4 per cent were found to have reinfection tuberculosis, 2.5 per cent being clinically significant, i.e., active. One of the population groups consisted of 16,810 college students, only .3 per cent of whom were found to have reinfection tuberculosis, only .2 per cent clinically significant. Another population group consisted of 15,795 high school students, with .4 per cent found to have reinfection tuberculosis, and .4 per cent clinically significant. All other population groups consisting of adults showed higher percentages than either of these. In a study conducted by Edwards and Unzicker[3] in New Haven, Connecticut, they reported that the actual cost of finding a new case of pulmonary tuberculosis by the examination of the contacts of cases of tuberculous meningitis was $78.00, by the examination of the contacts of cases of pulmonary tuberculosis $140.51, and by the examination of the contacts of children with positive Mantoux tests it was $1,063.50. F. T. Lord[5] states that in Massachusetts they have found one child in every 700 high school children examined to have adult tuberculosis. The cost of finding one case averages $1,000.00.

To make the examination of reported cases and their family contacts the only project meant, of course, that the Sanatorium must omit the other activities which it had previously carried on as a part of its field work, and the question was therefore discussed with the local medical society and the Otter Tail County Public Health Association. Both groups offered their enthusiastic support. Since funds and personnel were both limited, a very modest program was proposed. Fortunately, Dr. A. J. Chesley, of the Minnesota Department of Health, heard of the program and offered the assistance of the Minnesota Department of Health. Dr. Hilbert Mark, Epidemiologist in tuberculosis in the Division of Preventable Diseases, Minnesota Department of Health, was assigned to this survey. Funds for the purchase of x-ray films and for the employment of an x-ray technician and a clerk were made available from Social Security Funds through the Minnesota Department of Health and the Division of Social Welfare of the Department of Social Security. Through the coöperation of the Sanatorium Commission and the Otter Tail County Public Health Association, the Sanatorium field nurse was freed from her routine duties and assigned to the survey.

As one part of the survey, it was planned to examine all individuals with tuberculosis now living in Otter Tail County. The list of cases reported to the Minnesota Department of Health from Otter Tail County was used as an index. The registration of cases began in 1913 when tuberculosis was made a reportable disease. Since in 1939 about 19 per cent of persons dying from tuberculosis had not been previously reported as having tuberculosis, it was recognized early that the Minnesota Department of Health lists were incomplete, and local sources were used for clues to unreported cases. The other part of the survey was the examination of the members of the families of all reported cases of tuberculosis who were still living in the county. In locating the original

reported case, or if he was not available, his family, a visit was made to the postmaster, the physician, the health officer, the village or town clerk, and the old settlers in the locality of his last known address. A visit was then made to the home of the reported case, or his closest kin, and two forms were completed, one for the family, and one for the patient. The reported patient was given an appointment for an x-ray, and, if expectorating, two sputum specimens were collected for cultural study. His family, except for those known to have a positive Mantoux test from previous examinations, were requested to report at a Mantoux clinic in one of eight cities and villages selected for holding Mantoux clinics. Adults (except a few who presented themselves later than on the first day of each of the clinics) were given an initial Mantoux test with a 1:10,000 dilution of Old Tuberculin and if negative in forty-eight hours the examination was repeated with a dilution of 1:100. The 1:10,000 dilution was used first on adults since it was felt that a significant number of adults would react to this weaker solution, and in that way avoid painful local reactions which might possibly occur with an initial test of 1:1,000 dilution. The 1:100 dilution was chosen for the second test dose since it was known from studies at the University of Minnesota Medical School[1] that some 10 per cent more would react to a dilution of 1:100 than to 1:1,000, and it was felt that a test with the 1:100 dilution would not produce an inordinately severe reaction in adults negative to the 1:10,000 dilution. All children under twelve were given an initial test with a dilution of 1:1,000, and most of them were not retested. Adults who came to the clinic after the first day of testing were given one test with a dilution 1:1,000. All tuberculin used was Old Tuberculin freshly diluted for each clinic and furnished by the Minnesota Department of Health. All those found to have a positive Mantoux and all family contacts with a previously known positive Mantoux were given an appointment for an x-ray at the Sanatorium. Practically all the x-ray films were sent for reading to the roentgenological staff of the University Hospital, and every x-ray which exhibited evidence of reinfection tuberculosis was sent to them for confirmation. The report of the x-ray was made in writing to the family physician of the individual in each instance, together with recommendations insofar as tuberculosis follow-up was concerned. No reports were given to lay individuals.

The survey has now been completed in the eight areas into which the county was divided. In the county a total of 1,605 individuals had been reported from 1913 to the summer of 1940 as having tuberculosis. Of these, over 900 had died, nearly 200 had moved out of the county, over fifty were in some one of the several institutions in this state for the care of the tuberculous, about 100 could not be located, and there were an even 200 still living in the county. To date, 164 of the 200 remaining in the county have reported for examination, of whom twenty-one were found to have active open tuberculosis, and again in need of sanatorium care.

Field investigations revealed 698 family groups having a history of familial exposure to one or more cases of tuberculosis still residing in those areas. The term, family group, as used in this survey, more closely approximates an epidemiological unit than a family. Supposing two brothers had tuberculosis, and that each was married, with a wife and children. The family group in that case would consist of their father, mother, brothers, sisters, and each one's wife and children, three different families which make up the one family group. In these 698 family groups, 3,867 individuals were found residing in Otter Tail County. All of the 3,867 individuals except those with previously positive Mantoux tests were asked to attend the nearest Mantoux clinic. Of these, 1,522 presented themselves for Mantoux tests, and 765 were positive. At present, figures are not available on persons known to have had positive Mantoux tests previously and who were not retested at the clinics. Altogether 1,168 family contacts with positive Mantoux reactions have been x-rayed, and fourteen supposedly healthy persons were found to have active reinfection tuberculosis requiring sanatorium care. Six, or 45 per cent, were minimal, three, or 21 per cent, were moderately advanced, and five, or 35 per cent, were far advanced.

It is interesting to compare this with the previously unreported cases admitted to the Sanatorium in 1939. In 1939 only one new patient was admitted with a minimal lesion, 6 per cent of the seventeen previously unreported cases admitted.

An additional forty-four individuals were found to have reinfection tuberculosis, which ap-

pears inactive on x-ray but which will require further study to definitely determine activity.

The cost of the survey may be subdivided under the following headings:

Visits in the field, including salaries, travel expense, etc.	$3,296.86
Mantoux clinics salaries	399.75
X-ray expense, including salaries, x-rays, developing, etc.	1,195.20
Clerical expense, including salaries, postage, supplies, etc.	679.04
Total	$5,570.85

The cost as listed above is the total cost. No charge was made for interpretation of x-rays by the University of Minnesota Hospital staff. Included in the cost, however, is a proportionate share of the salaries of all regular Sanatorium employes who devoted part time to the survey, though their salaries were continued by the Sanatorium.

An estimate made by the Eastman Kodak Company[6] at Rochester, New York, as a result of a survey among 100 tuberculous employes disclosed that the average cost per individual for diagnosis, treatment, examination of contacts, and time lost from work was $4,000. The cost of the completed survey in this county is $5,570.85.

It is difficult to state the cost per case discovered because the survey consisted of two parts: (1) the examination of previously reported cases of tuberculosis; and (2) the examination of their family contacts. It is impossible to determine what proportion of the total cost should be applied to each group. In addition, some of the cases found are clinically unimportant and perhaps should not be considered. If one considers only the fourteen cases of active tuberculosis found among the family contacts, and divides the total cost by fourteen, one finds the cost per case to be $397.91. If one considers all the reinfection tuberculosis discovered among the family contacts, whether active or apparently inactive, a total of fifty-eight cases, one finds the cost per case to be $96.05. If one considers the fourteen cases of active reinfection tuberculosis found among the family contacts and the twenty-one cases found to again have active tuberculosis in the group of previously reported cases, a total of thirty-five, one finds the cost per case to be $159.14. If one considers all types of cases discovered, that is, the fourteen active and the forty-four apparently inactive reinfection tuberculosis in the family contacts, and the twenty-one found to again have active tuberculosis in the group of previously reported cases, a total of seventy-nine cases, the average cost is $70.52.

Could such results be duplicated in other parts of the state? Is Otter Tail County unusual in any respect? It is a large county of sixty-two townships, with a population in 1930 of 51,006. Sixty-five per cent of the population, 33,246 people, live in rural areas. There is only one city, Fergus Falls, with a population of 9,389, and seventeen villages, eleven with a population under 500, four with a population between 500 and 1,000, and two with a population between 1,000 and 1,500. There are only 107 individuals of races other than white. Of the whites, 84.5 per cent are native born, 15.5 per cent foreign born.

The Sanatorium was built in 1913 and it was the second county sanatorium established in the State of Minnesota. Through education, the people of the county have gradually come to accept the services of the Sanatorium. In the five-year period, 1915-1919, there were 183 people who died of tuberculosis in their homes, 69.5 per cent of the 263 deaths from tuberculosis. In the five-year period, 1935-1939, only twenty-five people died from tuberculosis in their homes, only 33.8 per cent of the seventy-four deaths. The morbidity and mortality rates from tuberculosis have been steadily falling, and the county has a record as good as the state average. In the five-year period 1915-1919, 429 people were reported as having tuberculosis; in the five-year period, 1935-1939, only 143 were reported, exactly one-third. In 1915-1919, there were 263 deaths from tuberculosis; in 1935-1939, only seventy-four, less than one-third. The average mortality per 100,000 in Otter Tail County in the five-year period, 1935-1939, was 29.01. The mortality in the state as a whole in 1939 was 30.2. That is a record to which Otter Tail County can point with pride. But, it was still possible to find thirty-five cases of active tuberculosis requiring sanatorium care. Is Otter Tail County unusual?

If such a survey as is in progress in Otter Tail County is considered valuable, and if such surveys are to be carried on in other parts of the state, how are they to be financed? Such a survey would not have been made in Otter Tail County without the assistance of the Minnesota Department of Health and the other coöperating

groups. Should not the counties make more funds available for such inexpensive case finding? The state provides financial assistance to the counties in the care of their indigent tuberculous patients by defraying a portion of the sanatorium cost. Should not the state also subsidize case finding programs? If the state should bear part of the cost of case finding programs, should its contribution be in the form of personnel temporarily assigned to the institution, as is the case in the present survey, or should its contribution be a cash subsidy to the institution for the partial support of the institution's own program? Will funds be made available by the state to partially meet the cost of continuing such surveys? After all, in the present survey less than one-third of the 3,867 family contacts, and only about eighty-two per cent of the 200 reported cases living in the county have been examined. In 1935, the State Board of Health, in accordance with recommendations of the Advisory Committee on Tuberculosis, submitted to the Legislature for its consideration a request for funds to aid the various sanatoria and the State Board of Health in such work.

For several years in this state there has been doubt as to the efficacy of the present sanatorium set-up for the control of tuberculosis. It has been felt that some of the smaller institutions have out-lived their usefulness and might possibly be replaced by larger district sanatoria; that tuberculosis has so decreased that it is impossible to keep the beds filled. It has been felt that these institutions, being small and in many cases not fully equipped, are unable to give adequate modern treatment for tuberculosis, treatment which in recent years has laid more and more emphasis on surgical procedures. If funds were available for more adequate case finding programs we would find in most areas in Minnesota that we would not have too many beds for tuberculosis, but too few. A small institution cannot offer as complete and adequate medical service to its patients within its own walls as may a larger institution, but in most cases the necessary additional treatment is easily available to the patients of small institutions by their referral for short periods to more adequately equipped institutions. More adequate case finding programs should result in the discovery of a larger percentage of minimal cases of tuberculosis. These minimal cases, as they do not require the facilities of the large institution in their treatment, could be cared for as well in small institutions near the patients' homes, and much of the need for new large institutions might disappear.

A sanatorium logically acts as a case finding center for the area which it serves. Before we decide to abandon the small institution now giving a concentrated case finding program to a small area of one, two, or three counties, we should be sure that the new plan for the control of tuberculosis will make at least an equally adequate provision for case finding in these areas.

A preliminary report of the tuberculosis case finding survey in Otter Tail County has been presented. Of 164 previously reported cases examined, twenty-one again were found to have active, open tuberculosis. Of the family contacts of previously reported cases, 1,168 persons were x-rayed. Of these, fifty-eight were found to have reinfection tuberculosis; in fourteen the lesions were definitely active, and the individuals were in need of sanatorium care; the lesions in forty-four appeared inactive but further study of these individuals is necessary. The importance of an adequate case finding program in tuberculosis has been emphasized, and the rôle of a small institution in such a program outlined.

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Family life in contact with a case of tuberculosis greatly increases risk of the infection spreading, especially in the age group when health is of maximum economic and social importance.—GEORGE H. RAMSAY, M.D., et al., *Health News*, Oct. 21, 1940.

COCCIDIOIDAL GRANULOMA: A BRIEF REVIEW WITH REPORT OF A CASE OF MENINGEAL INVOLVEMENT*

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FOR the past fifty years the study of pathogenic yeasts and fungi has held the attention of the botanist, the medical mycologist, the dermatologist, the medical internist, the surgeon and the pathologist. Years of research have brought to light many interesting observations on the life cycles of these lowly pathogens. Early difficulties in classification and identification of species gradually have been overcome and the pathologic lesions peculiar to the individual fungi elucidated. Among these pathogenic fungi, the coccidioides holds a prime position from the pathologic and mycologic standpoints. In addition, the disease it produces in man has a peculiar geographic distribution.

Historical Aspects

Wernicke, in 1892, described a case of dermatitis with abscesses encountered in Buenos Aires from which protozoan-like organisms were obtained. Death occurred and in 1900 Posadas gave a detailed account of the lesions. In the meantime (1894 and 1896) Rixford and Rixford and Gilchrist reported instances of a similar fatal infection occurring in two California laborers. Among the numerous and important contributions of these two early investigators were the observations that the organisms were spore forming in the lesions, that they elicited tissue reactions similar to those produced by the tubercle bacillus, and that rabbits were susceptible to inoculation by material from human lesions.

Although they noted a resemblance between the organism they described and the known fungus of blastomycosis, these investigators believed they were dealing with a protozoan (coccidioidal) infection. Stiles, a medical mycologist, named the parasite "Coccidioides immitis." That the parasite was in fact not a protozoan but a pathogenic mold was shown by Ophüls[9] in 1900. From material obtained in a case encountered by him this investigator demonstrated that the organism could be grown on artificial culture media and that it grew as a mold with the production of white mycelia. He classified it with the oidia, but suggested that out of respect to Rixford and Gilchrist the generic name should be retained. He proposed the designation "Oidium coccidioides" for the organism. Clinically he recognized cutaneous, pulmonary and mixed forms of the disease and he believed that the lungs as well as the skin were frequently the portal through which infection entered. Pathologically, he postulated that the sporulating form of the organism, seen only in tissue lesions, was merely one phase in the life cycle of the mold. Dickson, in 1915, reviewed the literature and found reports of forty cases of coccidioidal granuloma. He remarked at that time that thirty-five of these had been observed in California and that twenty-seven of these had been residents of or visitors in San Joaquin Valley. He gave 90 per cent as the mortality rate in the generalized form of the disease.

The condition by this time had become known as California disease. Many cases were reported in the literature and many valuable contributions were made by Moore, Benham, Meyer and others on the life cycle of the organism. In 1929, Dickson[3] showed conclusively that infection did occur via inhalation of chlamydospores produced in the vegetative phase and that the incubation period was about nine days.

In the period from 1929 to 1938 this same author made a discovery which startled the medical world and opened up a new field for the study of coccidioidal infection. For years the residents of the San Joaquin Valley had experienced epidemics of what was locally named valley or desert fever. This self-limited illness took the form of a severe influenza-like infection of the upper part of the respiratory tract with chills, fever, cough and expectoration. In 80 per cent of the cases within eight to fifteen days of the onset lesions simulating those of erythema nodosum appeared on the extremities. These lesions faded after four to five days; cough and other symptoms cleared up usually in three to four weeks. Dickson cultured sputa from a num-

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ber of these cases and found coccidioides in more than 70 per cent. In only one out of more than 350 cases of valley fever observed within a period of eighteen months did the disease progress to the stage of generalized dissemination. This patient died of coccidioidal meningitis.

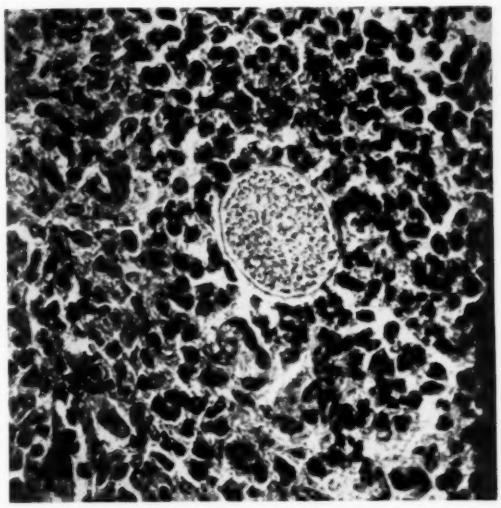

Fig. 1. Large oval doubly contoured and spore filled organism, Coccidioides immitis from specimen removed from the brain at operation. The acute inflammatory exudate forming a micro-abscess may be noted (hematoxylin and eosin, x475).

That valley fever is only one manifestation of coccidioidal disease is an observation, the importance of which cannot be overestimated. It serves to emphasize more than ever the peculiar geographic localization of the disease, its high morbidity and relatively low mortality rate when considered in all its phases, and from the standpoint of lack of immunity it explains perhaps why visitors to the San Joaquin Valley run special hazards of developing the granulomatous form of the disease. Coccidioides appears to be endemic in other localities, namely, Colorado, New Mexico, Brazil and the Argentine. However, doubt has recently been thrown on the authenticity of cases reported from South America. Of the many recorded cases of coccidioidal infection from South America Moore accepted only two. The remainder he considered as being caused by the organism Paracoccidioides, a fungus more closely related to the organism of blastomycosis than to Coccidioides immitis.

The general mortality rate of the disease including the cutaneous form and excluding valley fever is approximately 50 per cent.[18] At necropsy the lungs are practically always involved but almost every organ of the body has at one time or another been reported as the seat of metastatic lesions. Apparently both the blood and lymph participate in the general dissemination. In all of the seven cases[4,10,12,15,17] (including the one to be reported) of involvement of the central nervous system which have been reported in the literature the disease was fatal; basilar lesions have been present in all instances and in several meningeal involvement of the cervical portion of the spinal cord.

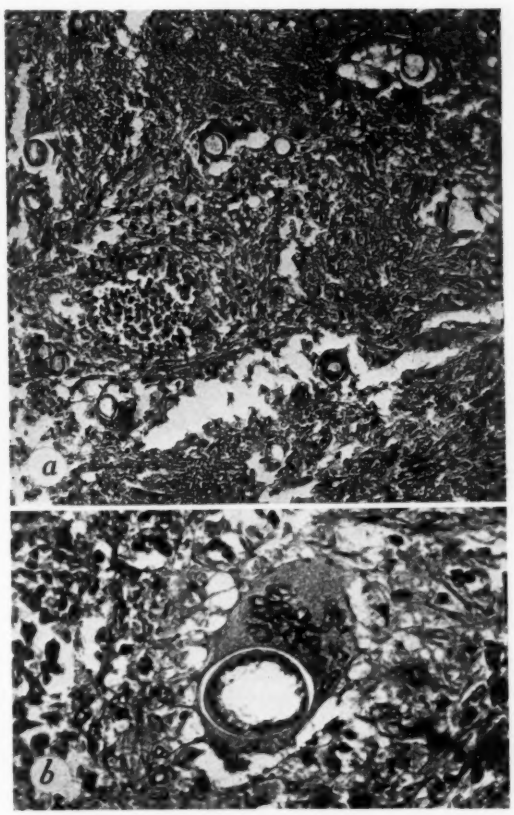

Fig. 2. Lesion from lung; *a*, coccidioidal organisms and surrounding chronic inflammatory reaction with numerous giant cells and moderate fibrosis in a nodular lesion from the right lung. The resemblance to tuberculosis is apparent (hematoxylin and eosin, x140). *b*, The coccidioidal organism within a giant cell (hematoxylin and eosin, x400).

The diagnosis of coccidioidal granuloma is usually made in the laboratory, either from a study of smears or sections of accessible lesions, sputum, and so forth, or by means of culture. In some cases the coccidioidin skin test furnishes additional evidence, but as pointed out by Dick-

son, aggravation of symptoms may follow the subcutaneous injections of any but minute doses of the toxin. The matter is being further investigated.

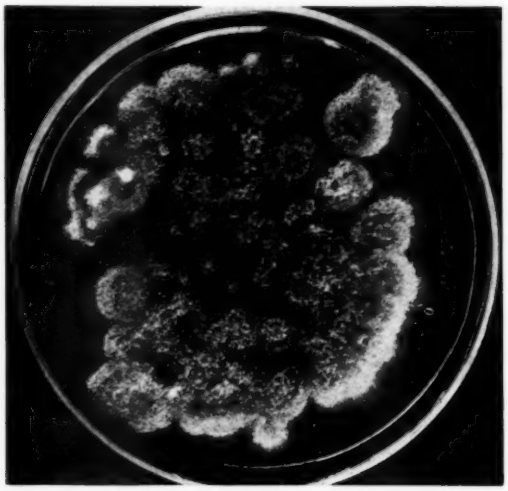

Fig. 3. Ten-day growth of coccidioides from infected brain. The colonies appear "fuzzy."

Treatment is unsatisfactory as a study of mortality statistics and a review of the numerous and varied remedies that have been tried indicate. Perhaps future investigation will confirm the findings of Jacobson whose coccidioidal vaccine employed in a series of twenty-four cases gave a number of apparent cures. All of Jacobson's patients survived except two who had meningitis.

Report of Case

The patient, a man aged forty-nine years, who had always lived in Iowa, registered at the Mayo Clinic on May 9, 1940, and gave a history that he had spent a vacation of two weeks in southern California in March. On April 25, which was about a month after he left California, mild occipital headaches developed. They were dull and throbbing and fairly constant except that they were worse in the morning. The headaches were made worse by bending over, but there was no extension of pain down the neck and no stiffness of the neck. A few days after the onset of the headache, he began to notice a dull ache about the left eye, and following consultation with an eye, ear, nose and throat specialist, his antrum was lavaged without any relief of pain. Five days before admission to the clinic the pain became intense, and he was confined to bed. As long as he lay quietly, he was fairly comfortable, but the minute he arose, the pain became very severe. Projectile vomiting occurred the day of his admission.

Neurologic examination gave essentially negative results except for marked incoördination of the patient's hands and arms. Spinal puncture was done; the Kolmer and Kline tests on cerebrospinal fluid gave negative results, and the values for globulin and

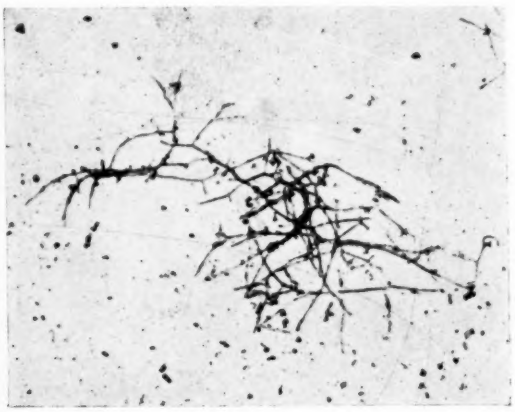

Fig. 4. The mycelia from the culture shown in Figure 3 with hyphæ and chlamydospores.

total protein were within normal limits. There were a few lymphocytes and a few polymorphonuclear leukocytes. Examination of the cerebrospinal fluid threw no light on the nature of the condition, but immediately after the spinal puncture the headache became much worse, Cheyne-Stokes respiration occurred, and the patient appeared quite sick.

The patient was hurried to the operating room, a bur hole was made quickly, and the right lateral ventricle was drained. The fluid was under moderate pressure, although the examination of the eyes had revealed no evidence of papilledema. Immediately following the relief of pressure, respiration became quieter, and his condition improved. The next day he felt fairly well, and we were able to reëxamine him. The only positive finding was the persistent incoördination. Our impression was that we were probably dealing with a tumor of the fourth ventricle, as we have seen patients with these tumors react in a similar way to examination and spinal puncture.

The spinal puncture was done on May 11, and on May 14, under ether anesthesia, with the patient in the upright position, bilateral cerebellar craniotomy and decompression were performed. The fourth ventricle contained no evidence of tumor. However, in the upper outer quadrant of the left cerebellar lobe at a depth of about 2 cm. a mass was found. When the cortical vessels were ligated and the cortex was divided with an electrosurgical unit down to the tumor, we thought we were dealing with a fairly well circumscribed gliomatous mass. When a portion was removed for biopsy and diagnosis from a frozen section, there was a gush of seropurulent material which at first seemed to be mucoid in nature. The brain was quickly protected and the entire mass was removed. At

first, this mass seemed to be neoplastic although it was associated with a great deal of inflammatory reaction. Examination of the frozen tissue suggested an abscess of unknown origin, and the contents were sent for culture. The lesion was treated as an abscess

condition, we would probably have thought he was improving.

Sulfanilamide, sulfathiazole and other chemotherapeutic drugs were used without effect. At the end of four weeks his condition seemed about the same

TABLE I. TISSUE DIAGNOSIS: DIFFERENTIAL POINTS

Organism	Disease	Reaction	Cellular products	Budding	Spores	Distribution of lesions
Blastomyces * dermatitidis	Blastomycosis	Acute, with polymorphonuclear neutrophils	None	Always	Never	Skin and generalized (lungs especially)
Coccidioides immitis	Coccidioidal granuloma	Acute, with polymorphonuclear neutrophils	None	Never	Always	Skin and generalized (lungs especially)
Debaryomyces neoformans	Torulosis	Mild chronic	Mucoid material	Sometimes	Never	Usually in brain, meninges

*The fungus "Zymonema dermatitidis" has been named by some as the etiologic agent in blastomycosis. However, because absolute proof of this is lacking, Henrici and others are in favor of retaining this older term, manifestly inaccurate, but justified on the basis of usage.

TABLE II. LABORATORY DIAGNOSIS: DIFFERENTIAL POINTS

Organism	Disease	Organisms in culture			Pathogenicity for animals
		Mycelia	Ascospores	Colonies	
Blastomyces* dermatitidis	Blastomycosis	Always	Never (?)	Dry and fuzzy	Slight or absent
Coccidioides immitis	Coccidioidal granuloma	Always	Never	Dry and fuzzy	Marked for all laboratory animals
Debaryomyces neoformans	Torulosis	Never	Recently demonstrated	Moist (mucoid)	Marked for rats and mice; slight for guinea-pigs (principally brain lesions)

*See footnote on Table I.

with drainage, and chemotherapy was instituted immediately. Fixed sections of the lesions, which will be described later in this paper, revealed Coccidioides immitis, and evidently we were dealing with coccidioidal granuloma of the brain.

During the entire illness the patient's temperature was elevated a little. The catheter left in the lateral ventricle for drainage drained large amounts of cerebrospinal fluid; when it was clamped off, the headache returned. This led us to believe that occlusion of the aqueduct of Sylvius was present and probably due to ependymitis. The patient was conscious, quite clear mentally, and if we had not known the etiology of his except for some marked drowsiness, although he could be aroused with difficulty. Suddenly on June 13, 1940, he had difficulty in breathing, acute respiratory embarrassment developed and death occurred.

Pathology

The surgical specimen, received from the operating room, on staining with polychrome methylene blue, presented at once the features of an acute inflammatory process. Occasional giant cells were seen and tuberculosis was con-

sidered as a possibility although the acuteness of the inflammatory process seemed rather unusual. Study of fixed frozen sections stained with hematoxylin and eosin revealed an acute and subacute inflammatory reaction with micro-abscesses. Within these tiny abscesses were seen round to oval doubly contoured refractile bodies varying in diameter from 8 to 15 microns. Occasional lanceolate forms were observed. Most of these bodies were completely filled with minute round spore-like structures (Fig. 1). In some instances these granular masses had ruptured through the capsule of the mother cell and spilled into the surrounding tissue. Occasional giant cells were encountered; some had engulfed the large organisms but in most instances the latter were seen in the midst of collections of polymorphonuclear leukocytes. Budding and the "spine" forms of the organism described by Benham and others were not observed.

At necropsy the material of interest consisted of the brain and the lungs. In the former, around the operative site, the inferior pole of the left cerebellum, and the lining of the fourth ventricle a purulent inflammatory exudate was visible grossly. The left cerebellar hemisphere was the seat of an abscess 1 cm. in diameter. Cerebral edema and hydrocephalus were superadded as a result of blocking of the passage of cerebrospinal fluid.

Both lungs contained multiple indurated grayish red nodules with caseous centers. These nodules were scattered throughout both lungs and had the gross features of chronic but active tuberculosis. No other gross lesions were observed.

Microscopic examination of the lesions of the brain presented the picture previously described. The pulmonary lesions proved not to be tuberculous but were nodules of coccidioidal granuloma. They appeared older than the cerebral lesions by virtue of a more chronic inflammatory reaction with many foreign body giant cells (Fig. 2*a* and *b*). This finally fitted in with the well recognized fact that the primary lesion of coccidioidal granuloma is frequently pulmonary. The results of cultures from the lesions are clearly shown in Figures 3 and 4 and need no special comment. Even without guinea-pig inoculation the diagnosis of coccidioidal granuloma was the only one fitting the recorded facts of the case. For a brief summary of the classic features which served to distinguish the closely allied conditions of blastomycosis, coccidioidal granuloma and torulosis, Tables I and II, modified from Benham, are appended.

Summary

A short account is given of the history of Coccidioides and the geographic distribution of the disease which it causes. In our case of coccidioidal granuloma the symptoms were the result of intracranial involvement, but the primary lesion was of pulmonary origin. The infection was almost certainly acquired by the patient during a brief sojourn in southern California.

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How long ago it seems. In 1859 Mr. Richard C. Downing, Superintendent of Sanitary Inspection of New York City, said, "I consider it very unjust to give the health inspector of the City of New York power to quarantine a house where there is smallpox."—*Better Times*, Dec. 13, 1940.

ANATOMY, PHYSIOLOGY AND SURGERY IN DUODENAL STASIS*

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Report of Case

J. E., a man aged twenty-five, had suffered since childhood from epigastric distress, nausea, a full feeling for some hours after eating, and a great deal of belching. There also was abdominal pain present. These symptoms all were at their worst when he was in the upright position; while in the reclining position he was a great deal easier. He was especially distressed after eating wieners, cold slaw, and highly seasoned foods. As long as he can remember he became nauseated or vomited when riding in a street car or train. As a railway mail clerk, he vomited many times while on duty. This simulated sea sickness, but was accompained by a bloated feeling. At this time an x-ray examination by Dr. Schons of St. Paul revealed, under the fluoroscope, a back and forth churning of the food column in the horizontal portion of the duodenum. A diagnosis of duodenal stasis was made. The patient was then placed on a lengthy medical regime.

An appendectomy had been done in 1931. The symptoms were not relieved by the removal of the appendix.

In June, 1937, the patient had improved under medical care and bed-rest, but as soon as he again went about his activities, he had the same misery. On September 18, 1937, he entered St. Joseph's hospital where another x-ray examination showed the same findings as before; no evidence of ulcer or carcinoma of the stomach or ulcer of the duodenum. There was quite a marked dilatation of the duodenum together with reverse peristalsis and churning of the food column in the right sided portion of the duodenum.

I first saw the patient who was referred by Dr. J. Lepak, on September 22, 1937. Operation was advised as the x-ray diagnosis was definite and a medical regime was insufficient to permit the patient to work.

On September 23, 1937, the operation was done under spinal anesthesia. Upon close examination of the third portion of the duodenum I found that by telescoping the jejunum into the duodenum that two fingers readily passed into the lumen. This convinced me that there was no intrinsic disease of the duodenum. I was impressed, however, by the embarrassing mechanical situation consisting of a narrow slit-like communication between the third and fourth portion of the duodenum. There was a formidable barrier to the patency of the tube due to extrinsic pressure of an overlying band of fat, containing the superior mesenteric artery and vein. The two entering fingers could readily lift this barrier but that was more lifting power than could be exerted by the peristaltic wave and besides the patient was in the supine position, in which there was less drag on the artery. A side to side duodeno-jejunostomy was made. The first two postoperative days required duodental tube suction. After that the convalescence was uneventful and on the fifth day the patient sat up in the chair feeling well.

Four weeks later he reported, "The former distress is gone, I have no sour stomach and no distressing belching."

Four months later an x-ray examination was made of the stomach and duodenum and we saw a duodenum with a normal lumen and the food passing through the recently made stoma.

In a letter of February 1, 1939, the patient stated, "I now enjoy good health for the first time in my life."

He now weighs 15 pounds more then he had ever weighed before.

Comment

The anatomic arrangement of this area in man is rather interesting and it becomes even more fascinating when comparing it to the anatomy in animals. In man the superior mesenteric artery leaves the abdominal aorta at an acute angle and extends caudally. At the apex of this angle is the left renal vein and next caudally is the duodenum. The superior mesenteric artery supplies the jejunum, ileum, cecum, ascending colon, hepatic flexure and the right one-third of the transverse colon. It is apparent that two or three hours after a meal there is in the upright portion a considerable drag of the small intestine and the right portion of the transverse colon due to gravity. These patients are greatly benefited by the horizontal position or the knee chest position simulating the quadruped.

The veterinarian speaks of this area of the anatomy as the anterior and posterior mesenteric artery. The anterior mesenteric artery in the animal has a different direction. The acute angle made by the superior mesenteric artery with the abdominal aorta in man does not exist in the animal. Incidentally, the close proximity of the anterior mesenteric artery to the duodenum is the probable cause of the transmission of the trypanasome, Stronglyus vulgaris, into the artery causing a fatal aneurism of the anterior mesenteric artery. This is a common disease among

*Read before the Saint Paul Surgical Society, Saint Paul, Minnesota, October 10, 1940.

horses and mules in the tropics and to some extent in the temperate zone.

The technic of x-ray studies of the gastro-intestinal tract up to a few years ago has consisted in visualizing the barium column descending in the esophagus, its entrance into the stomach, the careful scrutiny of the stomach itself and then the pylorus and the first portion of the duodenum. Our interest as a rule ended here. Occasionally the following x-ray pictures would reveal a duodenal diverticulum but we missed the fluoroscopic visualiziation of the food column in the duodenum. As soon as there is reverse peristalsis in the pars horizontalis of the duodenum the patient experiences a nausea. Much of the nausea patients complain of may have its origin in the duodenum. Mal de mer, street car or train sickness may have reference to a mild degree of duodenal stasis. Mal de mer sufferers as a rule are able to partake of food and are fairly comfortable lying flat on their back in their cabin.

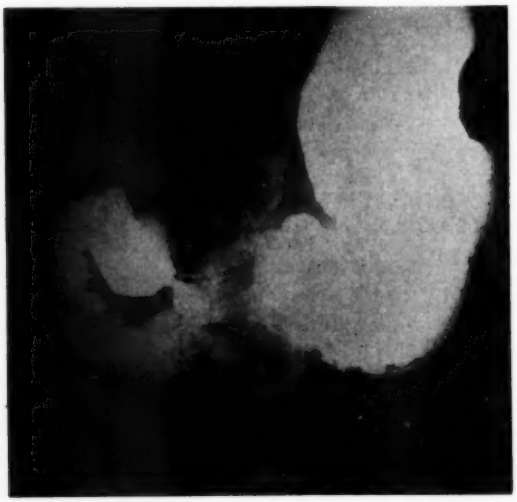

Fig. 1. X-ray appearance of the duodenum before operation.

The duodenum which normally has the widest lumen of the small intestine takes on added lumen dimension and probably increased thickness of its wall in this condition. Normally the food column after its passage through the pylorus fills the duodenal cap where it pauses a few moments and then in rapid glides flows uninterrupted through the rest of the duodenum into the jejunum.

Pool et al.[6] stress the need for exacting fluoroscopic examination of the duodenum in all cases in which there is any suspicion of difficulty. They describe the phenomenon "producing an abnormal puddling and cradling of barium in the dependent loop."

In the preparation of a patient for duodenojejunostomy, it is advisable that a duodenal suction tube be passed before the operation as usually the stomach in these cases is so ballooned that it adds to the difficulty of the operation on the duodenum.

Fig. 2. X-ray appearance of the duodenum after operation.

As to harmful consequences, Portis[8] reports, "It is well known that if allowed to go unchecked, these changes may result in severe toxemia. These changes manifest themselves in a drop of the plasma chlorides, a shift in the acid-base balance and the non-protein nitrogen of the blood."

Water, glucose, alcohol, potassium chloride, and sodium chloride can be absorbed by the duodenum.[8]

The term "abdominal neurosis" is a condition which is often associated with temporary delay in the duodenum.[8]

Brown[2] feels that "the upright position of man has brought about the difficulty because in animals the duodenum hangs free on a mesentery."

Earl[3] reports good surgical results in patients who do not respond to medical regime.

Duodenal stasis has been found to be associated with duodenal ulcer. Medical care is advised by all authors, as a great many patients are sufficiently benefited to be able to continue

their work.[4,1] The medical regime consists of any one of the following: rest in bed in the supine position from four to six weeks, duodenal lavage and feeding, the knee chest posture after meals, elevation of the foot of the bed and a well fitting abdominal support.

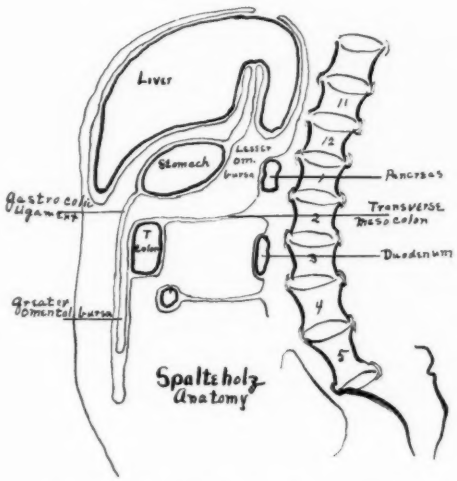

Fig. 3. Late embryonic stage of development of the omentum.

If the supine position does not produce results the prone position with a pillow support under the chest and pelvis, leaving the abdomen free, should be tried.

A variety of operations had been performed on a great many of these patients with no relief, indicating that the true condition had not been recognized.[7]

"The clinical symptoms are heaviness and fullness after eating, nausea, dizziness, a sea sickness, fatigue, headache, palpitation, irritability, insomnia and anxiety."[7]

Dr. Béla Halpert[5] of Prague has done some very extensive work on the anatomy and physiology of the duodenum and I shall borrow from him freely.

The detailed anatomical division of the duodenum is as follows: pars horizontalis superior from pylorus back and to the right; the flexura duodeni superior dextra; the pars descendens; the flexura duodeni inferior dextra; the pars horizontalis inferior; the flexura duodeni sinistra; the pars ascendens; and the flexura duodeni jejunalis.

The radix mesocolica divides the duodenum into pars superior and pars inferior. The radix mesenterii divides the duodenum into the pars dextra and pars sinistra.

The inferior pancreaticoduodenal artery and the median colic artery, as a rule, together with six jejunal arteries leave the superior mesenteric

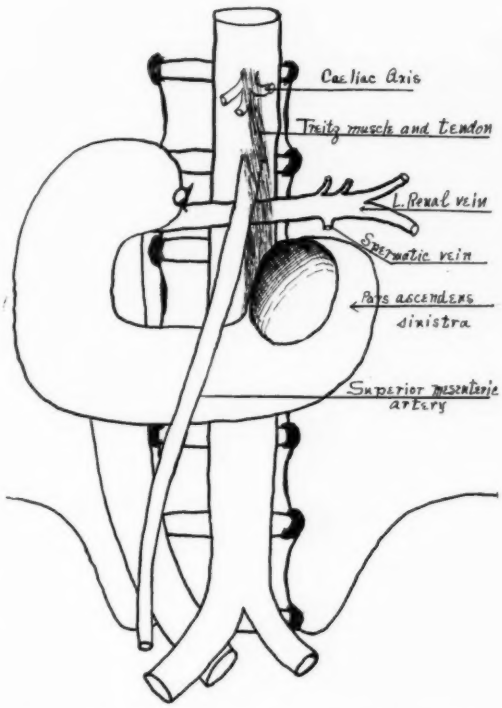

Fig. 4. Normal anatomy of the duodenum, left renal vein, artery superior mesenteric and ligament of Treitz.

before it comes to the point of duodenal compression. The mesenteric root containing the mesenteric vein and the now reduced mesenteric artery cross the distal horizontal portion of the duodenum where it crosses at the level of the body of the third lumbar vertebra.

Although the mesentery has a sufficient length to permit even normally the small intestine to rest in the pelvis, yet when there is a duodenal stasis present, we find that the mesentery of the small intestine lying in the pelvis following a meal exercises a sufficient pull to flatten the duodenum against the tense aorta.

The pars horizontalis inferior duodeni crosses the lumbar vertebræ at the level of the third lumbar while the superior mesenteric artery has its origin from the aorta at the level of the first

lumbar. As to the etiological factors of duodenal stasis, Halpert emphasizes the point that on the basis of a study of 300 autopsies he found that this condition can happen only when there are definite peritoneal abnormalities.

It is apparent that when a stretch is made on the mesentery of the small intestine, the angle of the superior mesenteric artery with the aorta becomes more acute. The direct pressure thus exercised would come first upon the left renal vein which occupies the very apex of the angle.

In these cases of duodenal stasis, Halpert also found an orthostatic albuminuria. The albumin would disappear with the patient in the horizontal position. He makes the observation that in the standing position the lumbar spine becomes more lordotic and together with the anatomical position of the renal vein in the acute angle of the superior mesenteric artery and aorta, plus the mesenteric drag in the standing position there is a compression of the left renal vein which produces passive venous congestion of the left kidney causing an albuminuria.

An erroneous diagnosis of nephritis can readily be made in such a patient. An orthostatic albuminuria could be used as an aid in the differential diagnosis of a high placed duodenal ileus.

Halpert has made further observations regarding anomalies:

1. There may be five renal veins on the left side.
2. There may be two veins, one passing in front and one behind the aorta.
3. Often the only left renal vein passes behind the aorta.

Sonne (quoted by Halpert) declares that inasmuch as the left renal vein is longer than the right and must pass over the aorta in the acute angle formed by the superior mesenteric artery and the aorta it must in addition pass over the lordotic lumbar spine and the thus constituted stasis of the kidney is the cause of the albuminuria.

Rieser (quoted by Halpert) is under the impression that orthostatic albuminuria is caused by compression of the left renal vein due to the fact that the superior mesenteric artery and the aorta act like a pincher upon the vein either because of a lordotic effect on the aorta or a tightening of the mesenteric cord.

Anatomically the right spermatic vein enters the vena cava directly. The left spermatic vein enters into the left renal vein. By the same process of compression causing stasis of the left kidney, we can also have the stasis extending into the spermatic or ovarian vein, causing a varicocele in the pampiniform plexus in the left scrotum or a varicose condition of the pampiniform plexus of the ovary on the left side.

In two case reports of acute dilatation of the stomach clinically diagnosed as pyloric stenosis, Halpert found at autopsy a hugely dilated stomach filled with fluid, and an overstretched pylorus with the duodenum equally tense up to the position where the superior mesenteric artery crosses it. The mesentery resembled a tense cord. A knot of small intestine lay deep in the right small pelvis. The small intestine was entirely empty up to the point where the superior mesenteric artery crossed the duodenum. At autopsy he experimented by lifting the knot of loops out of the pelvis, relaxing thereby the cord-like mesentery and immediately the impounded fluids rushed through the compression area and filled the, up to now, empty loops.

A typical picture of postoperative gastric dilatation, Halpert's first case had been diagnosed nephritis because there had been considerable albuminuria. But this was an orthostatic, lordotic albuminuria due to compression of the left renal vein which was pinched or compressed in the acute angle of the mesenteric artery and aorta. The abnormal course of the renal vein between the third lumbar vertebra and aorta, at the vertex of the lordotic curve of the lumbar vertebra, may also cause stasis of the left renal vein. In the horizontal position the lordotic curve is less, pressure is relieved and the stasis and albuminuria are corrected.

The superior mesenteric artery arises from the aorta at the level of the intervertebral disc between the first and second lumbar vertebrae. Immediately above this position is the celiac axis. Originating from these two first unpaired vessels of the abdominal aorta are tendonlike fibers passing downward with some muscle tissue, the Treitz muscle. The tendon fibers then spread out and attach themselves to the musculature of the pars ascendens duodeni. This causes the duodenum to be a fixed organ and there is no way that it could evade the pincher pressure of the mesenteric root.

Halpert recites the developmental peritoneal abnormalities as follows:

1. A high mobile cecum.
2. A short ascending colon.
3. A long transverse colon.
4. A long transverse mesocolon.
5. A deficient ligamentum hepatico colicum.
6. A second peritoneal attachment between liver and hepatic flexure.
7. A deep inferior omental recess due to a lack of union of the anterior with posterior surface of the greater omentum.

If these two peritoneal surfaces fail to unite, there is an absence of the gastrocolic ligament. The absence of this ligament together with the incomplete hepaticocolic ligament, which are the structural support of the colon, cause the transverse colon to sink deep into the lower abdomen. This brings about an increased pressure on the mass of small intestines.

Waldeyer (quoted by Halpert) points out that the transverse mesocolon, extending from the posterior abdominal wall to the tenia of the transverse colon, constitutes a partition between the upper and the lower abdomen, or divides the glandular abdomen from the intestinal abdomen.

The clinical case here reported represents a mild or moderate deviation from normal physiology. It helps to explain some of the types of nausea or sea sickness or car sickness which have no pathologic basis. Never shall I forget the comfort I once gained when suffering from mal de mer by lying supine and pillowless.

The cases described by Halpert are the advanced or completed picture which rapidly lead to a fatal issue.

Summary

1. A duodenojejunostomy corrected both clinically and radiographically the distressing symptoms due to a duodenal stasis.

2. In cases with peritoneal abnormalities there is a pinching or compression effect exerted upon the left renal vein and the pars horizontalis inferior duodeni by the superior mesenteric artery, mesenteric vein and mesenteric cord.

3. This is not a strangulation but a compression of the duodenum which causes a duodenal stasis. It may cause an acute dilatation of the stomach which may be fatal.

4. The same pressure on the left renal vein causes a left kidney congestion with orthostatic-lordotic albuminuria. Also it may cause a left-sided varicocele in man and left pampiniform varicosities in the ovary.

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A REPORT ON PROGRESS IN ADRENAL THERAPY*

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THE remarks I am about to make do not advance anything new or revolutionary on the subject but in them I shall attempt to review the late advances, and condense into form usable by the general practitioner knowledge which is not in general use. The subject was selected because of a severe case of Addison's disease which it has been the privilege of our group to follow and on which we have received aid and advice from Dr. E. L. Tuohy, and the Duluth Clinic staff.

Mrs. L. G., aged forty-eight, a cook at the farm school, had been seen by us at intervals since January, 1939. She is the mother of three children, the youngest twenty years old. She reported that when she carried him she had a severe influenza and after he was born she never menstruated again. There was

*From the Itasca Clinic, Grand Rapids, Minnesota. Read before the annual meeting of the Northern Minnesota Medical Association, Duluth, Minnesota, July 19, 1940.

no past history of tuberculosis or contact with anyone having it. Her Wassermann reaction was negative.

When we first saw her she complained of marked asthenia and tiredness especially severe in the morning but she had carried on her regular work. Her skin and mucous membranes demonstrated a mild but definite pigmentation which had come on very gradually but uniformly since 1935 but had at no time worried her or her family. She had no loss of weight.

Her previous life had been healthy except for periodic attacks of nausea and vomiting which had occurred once or twice each year for about twenty years. Various physicians had diagnosed these spells as food intolerance, indigestion, enteritis, gallbladder colic and iron deficiency.

Our general examination was entirely negative. Her blood pressure taken many times varied from 120 to 144 systolic and from 80 to 90 diastolic, her urine was negative, her blood picture was normal with a hemoglobin of 100 per cent and fasting blood sugar of 172. Her blood picture in 1935 taken elsewhere had been: Hgb. 75 per cent, r.b.c. 4,000,000, w.b.c. 14,400, but in the meantime she had taken ferrous sulphate intermittently.

We made no diagnosis. In May, 1939, she had a spell of marked nausea and vomiting, chills, fever and backache which lasted one day and when we saw her we were content to agree with her that some food indiscretion had upset her.

In November, 1939 her continued weakness led to a check-up by the Duluth Clinic and a diagnosis of Addison's disease. The positive symptoms were progressive asthenia, amenorrhea, pigmentation and syncopal gastric attacks. It is to be noted that normal blood pressure and maintenance of average body weight present in this case do not rule out Addison's. When one realizes that a patient with Addison's disease has often arrived at the autopsy table without any pigmentation at all or that pigmentation may occur five to six years before any physical symptoms appear and when normal blood pressure readings can persist long after the disease is active, one can appreciate the diagnostic pitfalls. It is interesting to note that at Duluth also her blood pressure was found normal, varying from 126 to 140 systolic. Her blood and urine examinations as already reported were normal. Several estimations of sodium chloride in the blood were made and these varied from 380 to 400 mgs. per cent The method of Dr. Wilder and associates for testing sodium chloride urinary excretion while the patient was on a high potassium intake was carried out. The findings were in keeping with the clinical manifestations, viz., whereas the sodium excretion dropped quite low it was not low enough at any time to institute clinical symptoms. The lowest blood pressure was 116 systolic. The diagnosis then rested principally on the asthenia and pigmentation.

The patient returned to us, remained on a high salt diet, was given plenty of extra vitamins and reported moderate improvement. Suddenly the afternoon of April 11, 1940, she became extremely ill with marked dyspnea, nausea, then severe vomiting, great weakness, headache and chills. When I saw her, the extreme dyspnea, chills and temperature of 102° made me wonder whether pneumonia was not impending. Palliative measures during the night failed and she was admitted to Itasca Hospital 8:30 a.m., April 12, 1940, and a diagnosis of crisis of Addison's disease was made, although her blood pressure still remained from 112 to 120 systolic.

Prior to 1922 and the advent of insulin the physician frequently sat by the bedside of a patient in diabetic coma and wondered if the day would ever come when medicine would conquer death from that case. On April 12 we stood beside a comatose patient with a normal blood sugar and urine suffering from an extreme Addisonian crisis and recalled the words of Dr. Roundtree in the Encyclopædia of Medicine of recent date—"Coma is not uncommon and recovery from it is rare. In many cases the last days of life are spent in what seems to be a restless sleep."

Without definite standards such as we now have in diabetes to guide us, we commenced intravenous medication, using normal saline and 10 per cent glucose with adrenal cortex extract, then more concentrated salt and more extract. Our patient became markedly cyanotic and her respirations assumed the Cheyne-Stokes type before we got any response and she started to rally.

In the first twenty-four hours she got 18 c.c. of adrenal cortex extract and twenty-six grams of salt intravenously plus adrenalin as a cardiac stimulant and 2,000 c.c. of 10 per cent glucose. She remained restless and at times delirious but always completely comatose.

The second twenty-four hours we gave 12 c.c. of adrenal cortex extract and twenty-seven and one-half grams of salt intravenously, continuing adrenalin and glucose as needed. During the afternoon of this day she seemed semi-conscious and aware of people about her.

The third twenty-four hours we gave her 13 c.c. of adrenal cortex extract and 37.5 grams of salt by intravenous route. Her respiration and pulse approached normal, toward the end of the night she became conscious and her general improvement was very similar to that of a patient recovering from a diabetic coma.

Each day after that we gave her 5 grams of salt plus as much as she could tolerate in her food with 9 c.c. of cortex extract the fourth day and 6 c.c. on the fifth and sixth days. Her recovery at this stage was without untoward event and she was discharged her eighth hospital day on 2 c.c. of cortex extract and about 5 grams of salt.

We had successfully brought our patient through her crisis. What of the future for her? In four days we had used adrenal cortex extract which cost thirty-two dollars. Such expensive treatment would make its continuous use prohibitive.

Fortunately biochemists have been at work.

There is now available a synthetic product which appears to furnish the essential hormone.

Let me first quote a brief historical sketch reported by Wilder:[4]

"In the course of the last ten years a successful major offensive has been made on a medical front which formerly seemed impregnable. The brunt of the campaign has been borne by investigators in the laboratories; the application of the advances made by them is the subject of the following account. The time is appropriate to review this past experience, because today, unless all signs fail, the knowledge and the means are at hand for a reasonably effective treatment of adrenocortical insufficiency, and until very recently, although steadily improving therapeutic results had been obtained, the disease defied us.

"Before 1930, when Swingle, Pfiffner and others provided active adrenocortical extracts, the mortality figures for Addison's disease were staggering. A few patients who were fortunate enough to have only partial destruction of adrenal tissue might live several years, but a large majority died within a few months and none could stand unusual stress of any kind.

"The extracts of adrenal cortex helped enormously. Patients in the shock-like state known as crisis, which before that time had almost always been a fatal event, could be restored to life. However, all such extracts were weak in activity and also frightfully expensive. The volume of material necessary was larger than could be given without great discomfort, and the cost, for any but the very rich, was prohibitive. Therefore, the ultimate results of treatment remained unsatisfactory, as Snell's report in 1934 made clear. On the basis of his data only seven of forty-six patients were alive more than a year after obtaining extracts.

"Then, in 1934, came the knowledge contributed by Loeb and confirmed by others, as well as our laboratories, that administering extra salt was beneficial, and soon thereafter the information came from several sources, that dogs maintained with salt after adrenalectomy excreted more sodium than chloride. If this was compensated for by giving mixtures of sodium chloride and sodium citrate, so as to provide more sodium than chloride, the patterns of electrolytes and concentration of urea in the plasma of adrenalectomized dogs remained normal.

"The clinical application of these facts was established promptly by observation of patients. It was found that they could be sustained more effectively than before, and with less adrenal extract, if they were given not only sodium chloride but also sodium citrate. We administered daily about 10 gms. of the former and 5 gms. of the latter. The salts were dissolved in a liter of water, artificial fruit flavoring was added and the solution was served iced under the inviting label of 'Addison's Elixir.'

"Another year passed, and the importance of controlling the intake of potassium was recognized by Allers, Nilson and Kendall. This information was applied in the hospital, where accumulating evidence soon revealed that as small an intake of potassium as 4 gms. a day, an amount no greater than that provided by general diet, would provoke excessive excretion of sodium and precipitate symptoms of Addison's crisis if patients were not receiving cortical extract. The same patients could be maintained with greater security than ever before and with still less, and in many cases no cortical extract, when the intake of potassium was limited to 2 gms.

"Administration of extra salt and sodium citrate and limitation of potassium greatly improved our clinical results, so that by July, 1937, Rynearson, Snell and Hausner could report that twenty-four of forty-three patients who received treatment between 1933 and 1937 were alive and in better condition than the surviving patients in the series reviewed by Snell in 1934. All of the individuals in the series reported in 1937 did not have the advantages of all the newer knowledge. Those that had died included many who had come to the Clinic before the diets low in potassium had been introduced.

"Results of the treatment of patients with Addison's disease continued to be as good as or better than those reported in 1937 until, early in 1939, when use of the crystalline preparation, desoxycorticosterone acetate, was begun at the Clinic. The brilliant work of Steiger and Reichstein made this available synthetically in 1938."

Since its discovery much therapeutic experimentation has been carried out by Thorn and Firor[3] at Baltimore; McCullagh[1] and Ryan at Cleveland and others using this synthetic crystalline cortical hormone which is manufactured by Schering under the trade name of Cortate and by Ciba as Percortin. This substance is now available in two forms: (1) in sesame oil for intramuscular injection where 1 c.c. represents 5 mgs. of desoxycorticosterone acetate; and (2) in pellets for subcutaneous implantation, each pellet containing 125 to 150 mgs. of the hormone and permitting an absorption of .25 to .35 mgs. daily.

The Baltimore men now have a good series of cases in which they have used the implantation method, putting from two to sixteen pellets under the skin after standardizing the patient on 4 to 8 gms. of sodium chloride daily plus a maintainence hypodermic dose of the hormone in oil. The Cleveland men have utilized the hypodermic method in all but one case and they seem to feel that they are getting a satisfactory response in a smaller number of cases using substantially the same amount of added salt daily.

In the case of our patient we obtained from Schering through Dr. Stoner three 150-mgm.

pellets of this experimental cortate and following the Baltimore technic implanted one pellet in the subcutaneous tissue of the infra scapular region. Eight days later, because the patient complained of the chair and her clothes rubbing it, I removed the pellet and replaced it together with a second one under the skin of her anterior abdominal wall. She is having no trouble now and, taking about 3 gms. of added salt daily, is doing her daily work as cook.

In the *Journal of the American Medical Association* for June 29, 1940, there are three articles, the Baltimore and Cleveland ones referred to above and one by Dr. Rowntree[2], now of Philadelphia, who reports six cases successfully treated exclusively with a non-commercial extract of the adrenal cortex, ignoring entirely the synthetic hormone. His final paragraph states:

"To me, whose experience with Addison's disease has been unusually large, these results represent the best I have seen to date. In years gone by, the care of patients with Addison's disease was fraught with constant anxiety. Formerly, patients were more or less continuously in a crisis, while now they are active, ambulatory, in moderately good health and going about attending to their daily business. In this series of patients crises have been prevented to a large extent and control of the hormonal deficiency has been effective. No toxic effects from treatment have been noted at any time in any of these patients, and local irritation has been entirely lacking. With the regimen outlined, the disease has been greatly ameliorated; remissions have been prolonged, complications rare and crises decreased in frequency and severity; rehabilitation has been striking and the survival time markedly increased. The last six consecutive patients on this regimen have averaged almost seven years of survival no deaths. From these results it is evident that true and nearly five years under this form of treatment with progress has been made in the treatment of Addison's disease."

That is fine except that as general practitioners we do not have available to us such non-commercial extracts and our patients have not the means to purchase them commercially.

Thorn and Firor, in their article, have the accompanying table showing the approximate cost of a year's medication.

At the price paid for cortical extract by our patient, 8 c.c. of the aqueous cortical extract per day would run to $1,170.00 for a year's treatment. That cost alone would seem to make Rowntree's method of treatment prohibitive in Addison's disease.

Preparation	Daily Requirement	Cost Per Year
Aqueous adrenal cortex extract	8 c.c.	$900.00
Synthetic compound in oil	2.6 mgs.	140.00
Pellets of synthetic compound	1.8 mgs.	98.00

Desoxycorticosterone acetate in oil does not exert its maximum effect until six to twelve hours following intramuscular injection. Therefore during the coma and the severe portion of the crisis it is necessary to supplement the synthetic hormone with intravenous and subcutaneous aqueous extract. For prolonged treatment one is forced to look elsewhere but before leaving the subject it should be reported that the natural extract has distinct uses in certain acute conditions such as toxemias of pregnancy, the acute toxemia of burns, in surgical shock and as pre- and postoperative treatment where stormy courses are expected or encountered.

A careful study of the cases reported by both the Baltimore and Cleveland groups indicates that use of the synthetic hormone is positively indicated in patients with Addison's disease who are unable to resume normal activity when treated with adequate quantities of sodium chloride and sodium citrate plus a diet low in potassium.

Thorn and Firor state:

"Desoxycorticosterone acetate is one of several crystalline substances isolated so far from adrenal cortical extracts. It is by no means certain that any one of the compounds thus far isolated represents the active form of the naturally occurring hormone. As tested by its potency in maintaining the life of adrenalectomized animals desoxycorticosterone is the most active of all the compounds thus far identified. . . . It is to date the only compound which has been synthesized and the only crystalline compound which can be obtained in quantities for clinical trial. It is evident that the quantity of supplementary sodium chloride administered to such patients must be carefully regulated during treatment with desoxycorticosterone acetate. Excessive quantities of the synthetic adrenal cortical principle and sodium chloride may result in the appearance of edema, hypertension and in some instances, signs of congestive heart failure. Occasionally the appearance of edema and excessive rise in blood pressure may necessitate a reduction in the dose of desoxycorticosterone acetate before the maximum therapeutic effect has been attained. Since the great increase in blood volume, the rise in blood pressure and the increased physical activity which follow the

institution of treatment with the synthetic compound rather suddenly place a considerable additional load on the cardiovascular system, it is advisable to restore most patients rather slowly to normal activity. The grave nature of the possible complications indicates the need for care in the institution of treatment and the necessity for continued medical supervision."

The same authors, concluding a report of continued and striking clinical improvement in twenty-one out of thirty cases treated by the pellet implantation method, state:

"Treatment with the synthetic adrenal cortical principle appears to be an efficacious form of specific therapy for patients with Addison's disease. The uniform potency and stability of the crystalline product permit more exact regulation of therapy. The relative inexpensiveness of treatment with desoxycorticosterone acetate will permit most patients to afford adequate therapy."

McCullagh and Ryan conclude their report on their six cases treated hypodermically with the following statement:

"Evidence is presented which indicates that desoxycorticosterone does not yield complete adrenal cortical replacement. In view of this, we feel that for the present, at least, it is in the best interest of the patient not to depend on desoxycorticosterone as therapy in Addison's disease to the exclusion of adrenal cortex extract in the presence of crisis or if some symptoms remain uncontrolled."

It is our opinion that marked progress has been made in adrenal therapy. The general practitioner can with advantage use both the extract and the synthetic hormone in certain acute toxemias and operative procedures. Where marked hypo-adrenia is noted by definite symptoms or where Addison's disease has appeared we now have at hand new therapeutic agents of proven efficacy and value. The practitioner may now feel that like diabetes, Addison's disease is losing its battle with medical progress and he should avail himself of both the natural and synthetic hormones and use them intelligently in conjunction with adequate sodium and reduced potassium intake in the treatment of all clinical conditions associated with hypo-adrenia.

Addenda

After the above report was written the patient continued on a high salt low potassium intake. The absorption of the hormone from the pellets did not seem to be quite sufficient to maintain her general well-being. However, irregular doses of 5 mgs. of Cortate intramuscularly made her feel fine and prevented any crisis.

Early in November, Schering again provided us with some pellets and we planted six, each weighing 150 mgs. in the anterior abdominal wall. These gave a theoretical absorption of .35 mgs. each or 2.10 mgs. per day for the six. The patient looked and felt well and except for occasional mild nausea was symptom-free. Her pigmentation was about as before and her blood pressure stayed about 140/80.

On January 5, 1941, she arose as usual, prepared breakfast and enjoyed it with her family. An hour later she went to her bed, lay down, told her husband she was nauseated and a moment later was dead.

At post mortem we recovered the pellets and checking their weight found that from them we had an absorption of 5 mgs. per day.

The post mortem examination of adrenal tissue showed that only 3 gms. remained instead of the normal 11 to 14 gms. Dr. George Berdez, pathologist, St. Mary's Hospital, Duluth, Minnesota, reported microscopic sections as follows:

"The cortical layers are completely atrophic and replaced by fibrous tissue in some area; in other areas, what is left of the cortex is densely and diffusely infiltrated with lymphocytes and shows also small groups of giant cells, some of them similar to those seen in tuberculous processes; there are, however, no tubercles and the arrangement of those giant cells would rather suggest that some of them are foreign body giant cells taking up debris of the breaking down tissues; other of those giant cells are the result of repeated nuclear division in reticulo-endothelial cells stimulated by the inflammatory process. Marked degenerated cells of the cortex, sometimes in small groups, sometimes isolated, can still be recognized in places. The cytoplasma of those cells stains diffusely red, is often finely granular. Frequently the nuclei do not stain. The medullary substance is also atropic and infiltrated with lymphocytes. In sections stained with scarlet red, small groups of cells of the cortex can still be recognized; some of those cells of the cortex are still loaded with granules staining red with scarlet red."

Our final conclusion in this case is that desoxycorticosterone acetate is of considerable value in preventing crises and in this case apparently gave our patient several months of life she would not have had without it. We believe more work will have to be done to determine the exact amount of daily absorption the individual obtains per 100 mgs. of implanted pellets. In addition we will have to develop some method of estimating more accurately the actual dosage required daily. The accurate required daily dosage of insulin can be established irrespective of the amount of destruction of the islands of Langerhans. In Addison's disease we apparently lack any criterion except the well-being of the patient.

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INCISIONAL HERNIA AND ITS REPAIR*

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ABDOMINAL operations are often performed in the easiest and quickest way possible to relieve the patient of the immediate trouble without due consideration of the ultimate results of the operation.

One of the complaints after a laparotomy may be an incisional hernia and, judging from the literature and records examined, I believe too many occur that could have been prevented had the operator taken into consideration all of the causative factors of incisional hernia.

The results of operations for these incisional hernias are none too satisfactory. These hernias usually occur in fleshy persons, especially women, in whom a hernia is not noticed by the patient at once inasmuch as most of them have been wearing a corset or abdominal support. The symptoms at first are vague and mild; the individual becomes used to the discomfort and the hernia develops so insidiously that the advice of a physician is not sought until the mass becomes so large that it is noticeable and unsightly, the suffering becomes severe, or obstruction of the bowel occurs.

The rate of occurrence of postoperative incisional hernias is difficult to determine, for usually only those that give trouble are seen and some others are observed in connection with more distressing maladies.

Some of these so-called postoperative hernias are simply a stretching or thinning out of the muscle because of the nerve injury at the primary operation.

Masson[5] reports 2.6 per cent of incisional hernias in all abdominal operations, or 14.66 per cent of all hernias. Mohorner[6] reports twenty-four incisional hernias in 112,686 cases admitted to the New Orleans Charity Hospital in 1937 and 1938. Hartzell and Winfield,[4] in a review of the literature, conclude that wound disruption occurs in about 1.5 per cent of cases and may be due to vitamin C deficiency. Cave,[1] in eleven years at Roosevelt Hospital, found 6.02 per cent of all hernias were incisional and 2.2 per cent incisional hernias occurring in 5,366 abdominal operations; and, in 162 drained appendices operated by McBurney's incision, twenty-one hernias developed.

Singleton and Blocker[8] state that hematoma and infection in 1,924 cases, reviewed by Jenkins, resulted in incisional hernia in 22 per cent. In reviewing 9,000 consecutive abdominal incisions, they report infection in sixty cases.

Infection of an abdominal wound is conceded by most surgeons as a potent causative factor in incisional hernias, especially if there is sloughing of the fascia. Abdominal operations for the drainage of abscess cavities, diseased gall bladders or ruptured appendices frequently are followed by incisional hernias.

I have observed that it is often possible to shorten the healing and convalescence periods in patients being drained for an abdominal abscess, by turning them over on the abdomen and allowing the pus to gravitate outward.

Rhodes and Hatterstein[7] conclude from experiments that tanned iodized catgut is the best suture material to use. Many surgeons prefer fine silk for the fascia, but I have been satisfied with chromic No. 1 or 00 with supplementary tension sutures.

When possible, the median incision is chosen in order to avoid injury to the blood and nerve supply: but, in potential hernia cases, the rectus may be pulled to one side and the peritoneum opened back of the muscle instead of in the center. However, care should be taken not to injure the deep epigastric vessel, for, as noted by Thos. C. Cullen,[2] "hemorrhage into and beneath the rectus muscle may seriously complicate the operation." I think this happens occasionally and results in an abscess weakening the abdominal wall. Sloan[9] believes that by using physiological incisions all incisional hernias can be eliminated except those caused by drains.

Incisions in the lateral abdominal wall are made in the line of the nerve supply when possible. If the main motor nerve to the muscle is injured there is apt to be insufficient tone and strength to these tissues and a weakened abdominal wall, with bulging or a real hernia occurring. The main blood vessels and nerve to the

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various layers of the abdomen should be conserved, if possible, in order to promote healing.

The peritoneum is often very thin or has a great deal of fat superimposed. A careless, hasty and imperfect closure of the peritoneum invites a postoperative hernia especially if the posterior sheath of the rectus muscle is not also carefully sewed.

Self-retaining wire retractors, as well as crushing forceps, may cause injury to the peritoneum and imperfect healing at these points. It has been my habit to avoid undue trauma or pressure to the peritoneum and to close the peritoneal membrane by suturing back and forth through its everted edges (Fig. 1-A). This gives a firm closure with a smooth inner surface and when a sufficient amount of tissue has been included there is little chance of a gap remaining in the peritoneal suture line. This is especially so when a second suture is run along the edges of the peritoneum and another along the fascial layer (Fig. 1-B). Dermal mattress sutures are also used, passed through the cut edges of the fascia, skin, and through rubber tubing and loosely tied. They relieve the strain on the other sutures and firmly hold the tissues so that oozing and consequent infection is less likely. Any exudate is evacuated by small drains extending through the skin to the fascia. The stay sutures may be left in for fourteen to twenty days. Subcuticular sutures for the fat layer are unnecessary when stay sutures are used.

There is no question but that minimizing intra-abdominal pressure lessens the possibility of hernia, and, therefore, nasal suction is always employed on the least indication of distention or vomiting, and the rectal tube for colonic gases. Additional essential vitamins are supplied, and transfusions are given when necessary. Food is given as tolerated.

The preliminary care of patients to be operated upon for incisional hernia is more essential than at the primary operation.

The patient should be sent to the hospital and kept there until the hernia is reduced, if possible. In order to determine more accurately the status of the case, a flat plate of the abdomen should be taken, and, in some instances, a barium enema and radiograph taken. Nasal suction will empty the stomach and intestines above any obstruction, and the colon should be emptied from below. In case of anemia, transfusions can be given. Heart complications should be studied, and pulmonary and laryngeal disturbances should be combatted.

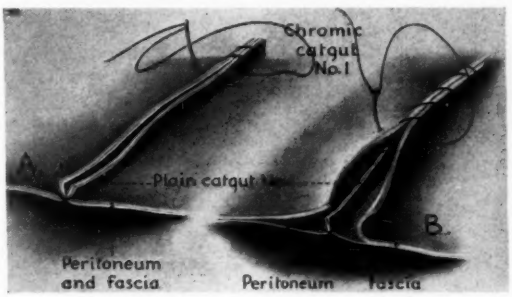

Fig. 1. Peritoneum everted, with suture lines.

Operation for Postoperative Hernia

A preliminary hypodermic of morphin and atrophin is given and local anesthetic used as a rule. The incision is transverse or perpendicular according to the size and location of the hernia, and should be sufficiently extensive to allow exploration for possible multiple hernias which are frequently present after a midline incision.

Where it is possible to separate the peritoneum from the fascia it is closed by an overlapping method with catgut. In cases with fairly good muscle structure, the sheaths are incised and apposed in two rows, making muscle approximation more perfect.

When the hernia is small, no doubt the transverse incision is best, and the flaps are overlapped as in the Mayo operation. This method overcomes the lateral pull of the abdominal muscles on the suture line, and should be chosen where possible.

Where the peritoneum is not easily separated from the fascia, the fascia and peritoneum and any thin muscle structure present are thoroughly separated from the fat and overlying skin. When the intestines are not distended with gas, these tissues may be overlapped laterally, the underlying peritoneal layer and fascial flap are stitched to the peritoneum on the opposite side with chromic catgut No. 1 (Fig. 2-A). Stay sutures are then passed through the skin from the side where overlapping occurs, through the upper flap and the fascia of the underlying flap and brought back through these tissues as a mattress suture. A row of these interrupted mattress su-

tures is placed along the abdominal wall. A second line of continuous sutures of chromic catgut, No. 0, doubled, fastens the edge of the upper flap to the fascia of the lower flap. This possibility of hemorrhage, oozing, and infection. Each bleeding point is securely controlled and a few strands of catgut or small flat rubber drains are loosely placed through the skin line of inci-

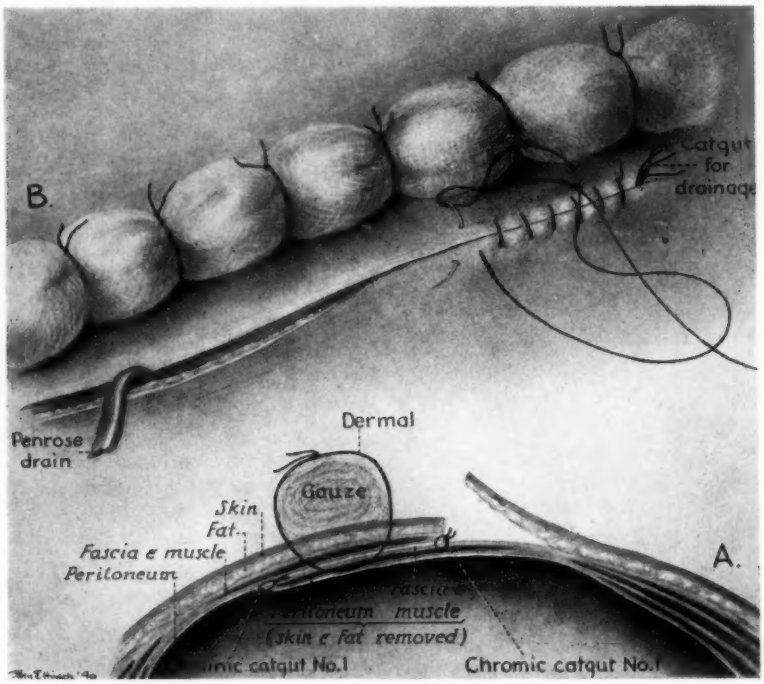

Fig. 2. Repair of postoperative hernia. Mattress sutures over roll of gauze on skin.

secures the two flaps firmly together and makes an impenetrable wall excepting, of course, in such cases where there is insufficient fascial tissue to make this operation possible. Under such circumstances a less extensive imbrication may be done and in some instances a pedicle flap of fascia is dissected from nearby tissue and turned in to complete this defect (Fig. 3). However, I have found few cases where this is necessary if the preliminary treatment has been carried on long enough to reduce the hernia and overcome some of the obesity and tension. In some instances it is necessary to put additional sutures along the flaps to secure them firmly.

The mattress sutures are tied over a long roll of gauze outside the skin which distributes the pressure, prevents the cutting in (Fig. 2-b) of sutures, gives a somewhat elastic tension upon the secured tissues, makes a broader surface of approximation of the structures, and lessens the sion to carry off any serous or bloody exudate that may occur beneath the skin. This system I employ in all other hernia operations. It gives excellent results.

We have not used the Gallie[3] fascial strip to lace in and through the approximated structures, though we would not hesitate to do so if necessary. We have used the fascial flap. The extra time consumed and the added danger of infection makes this fascial strip operation more hazardous, however.

Smith and Masson[10] conclude that ventral hernias which they have not been able to repair previously can be repaired with sutures of fascia lata.

The lateral pull of the abdominal muscles may account for some recurrences. They should be immobilized as much as possible by abdominal adhesive strips and a binder directly following the operation. It is well to apply these strips after the wound is healed and left supporting

the abdomen for several weeks, but an abdominal support should also be properly fitted and worn for months thereafter. Tone and strength of the abdominal muscles should be restored by systematic daily exercises.

The rate of recurrences is variously estimated, but averages about 36 per cent. This percentage can and should be reduced.

The following is a summary of the records of a series of seventy-seven cases of incisional hernias studied at the University of Minnesota Hospital.

The ages ranged between twenty-two and seventy-eight years; forty-three were females and thirty-four males.

Forty-six were operated upon for repair of the incisional hernia; thirty-one were not. Of the forty-six patients operated upon, twenty-four were by the lateral overlap method, three by the Mayo method, and six by the direct method.

Of the forty-six patients operated upon, twenty-seven had complications, namely, gallbladder, appendicitis, pelvic tumors, or diabetes, heart or kidney trouble. One patient died in this group, a mortality rate of 2.9 per cent.

Of the thirty-one not operated, most had complications more serious than the hernia, so operation was deferred.

Of the forty-six operations, the immediate results were satisfactory in thirty. The ultimate results we were not able to determine from the chart records as many did not return for a checkup. In 9 cases (20 per cent), the results were poor.

The primary operations, followed by the hernias, were: nine appendectomies with drainage, three for gallbladder, and the others were for pelvic tumors, tubal trouble, etc.

In a similar summary of 125 cases at Minneapolis General Hospital, we found:

The ages ranged from ten to eighty-two years. There were sixty females and sixty-five males.

Fifty-three patients were operated upon for repair of the hernia. Seventy-two were not operated upon, because of other serious or more important disorders.

Of the fifty-three operations, thirty-two were by the overlapping lateral method, one by the Mayo method, twelve by direct approximation, one by incision of recti sheaths, one by using a Gallie fascial strip, and three a fascial flap.

Of the fifty-three patients operated upon, one died, a mortality of 1.8 per cent. All the other patients operated upon were improved when discharged but the percentage of recurrences is difficult to estimate as few returned for a checkup.

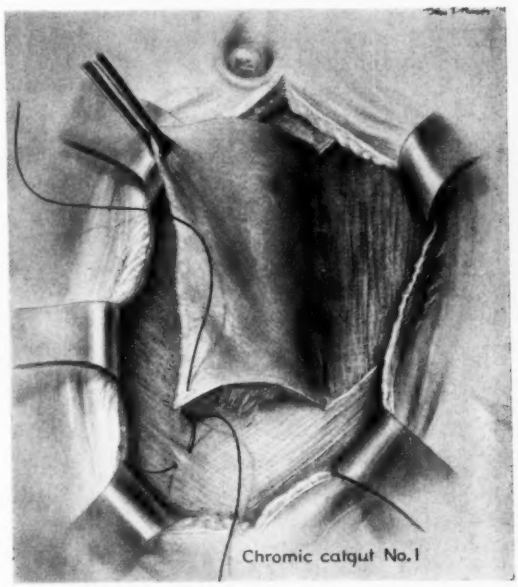

Fig. 3. Fascial flap repair of postoperative hernia.

The primary operations which were followed by hernia were: twenty-seven appendectomies (21.6 per cent); fourteen gall-bladder operations (11.2 per cent); and the others were hysterectomies, tumors, ulcers, et cetera.

In a series of fifty-five private cases of postoperative abdominal incisional hernias, there were forty females and fifteen males. Thirty-one females were operated upon for repair of the hernia; nine had either small non-disturbing hernias or associated diseases more troublesome than the hernia. In those operated upon, the results were good, excepting two who each had a small recurrence. These were in obese women who had inadequate support at first, but have little trouble with the hernia now.

Of the fifteen males, all were operated upon except two, who have very little trouble with the hernia. The results were good in all those operated upon and there were no recurrences in this group.

Of the forty-four patients operated upon, the cause of the hernias in twenty-one cases was acute appendicitis with prolonged drainage, where

the patients were not turned over on the abdomen after operation. In nine instances the previous operation was for gall-bladder disease with drainage. In twelve cases a low median incision had previously been made for operations on the pelvic organs in rather obese women and drains employed in three cases. One of these patients weighed three hundred and thirty pounds. There was inadequate support in most of these cases following the primary operation. The remaining hernias followed operations for carcinoma of the colon.

The direct apposition of structures with imbrication of the external fascia was done in seven cases. The Mayo operation was performed in three cases. In all others there was an overlapping of the opposing structures in layers when possible, or when inseparable as a single flap, supplemented by a contiguous fascial flap in two cases. These overlapped structures were united with chromic catgut No. 1 or 0, doubled, and stay sutures tied over rolls of gauze or rubber tubing. Drainage through the skin was secured by small catgut strands or small flat rubber drains.

Whenever possible, the hernial sac was carefully dissected to within the abdomen and was secured to the inner abdominal wall opposite firm abdominal wall tissue where feasible.

In this series of private patients operated upon for repair of the hernia, there was a recurrence of 4.6 per cent and no mortality, but in all of them we were able to prepare the patient for the operation, except in two cases where there was an obstruction so severe that an immediate operation was performed. Some of these patients were advanced in years and had little resistance; others were operated upon for some associated trouble as well.

Two died of cancer of the colon a year later. Four have thin walls and some pain and might have a recurrence if no support were worn.

We may attribute the success of this work to: (1) the time permitted for preparation of the patient for an operation, (2) the use of local anesthesia in most cases; (3) the employment of nasal suction when necessary; and (4) the fixation of tissues by means of the stay sutures tied over gauze rolls or rubber tubing which makes a broader apposition, lessens bleeding, and prevents cutting of sutures.

Conclusions

1. The incidence of incisional hernias following abdominal operations is greater than it should be, and is more than most records show.

2. Surgeons should conserve nerve and blood supply and give more thought to the possibility of hernia following a primary laparotomy in order to prevent such an occurrence.

3. Essential vitamins and blood transfusions when indicated should be supplied at the primary operation.

4. The preparatory treatment for an incisional hernia operation is very important.

5. The general condition of the patient should be satisfactory and, except in emergency cases, the hernia should be reduced before operation.

6. The incision for a cure of incisional hernia should be adequate to permit the correction of any obstruction to the bowel, and proper identification of the tissues and all openings.

7. A small single hernia may be repaired by the Mayo method, but a large single or multiple hernia should be corrected by lateral overlapping of tissue with the addition of fascial flap or Gallie's fascial strip where necessary.

8. The mattress Dermol suture has proven most satisfactory in holding the supportive flaps together, when tied over rolls of gauze or rubber tubing on the skin and should be left in place for two to three weeks.

9. Very small rubber or catgut strands give ample drainage of subcutaneous areas.

10. The nasal suction tube should be used in most of these cases for two to four days.

11. Snug adhesive bands should be applied directly following the operation, and a well-fitting abdominal support worn constantly for several months after these operations.

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DERMATITIS MEDICAMENTOSA
A Teaching Summary*

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BY "dermatitis medicamentosa" is meant an eruption which occurs in a sensitized individual following the absorption and dissemination of drugs. The term "drugs" includes medicaments in general, simple or complex materials which act through the whole molecule or a particular split product. The portal of entry may be the skin, by means of contact or inunction (iodine, mercurials, procaine, quinine), the gastro-intestinal tract, by means of the mouth or rectum (phenolphthalein, barbiturate derivatives, atropine), the deeper tissues, by means of parenteral injection (salicylates, gold salts, arsphenamine), or rarely, the respiratory system, by means of inhalation (ipecac, belladonna, pyrethrum). Drug eruptions are primarily allergic in nature, but not altogether so. Although the skin and mucous membranes are the chief sites of attack, untoward reactions may appear in other tissues, such as the liver, the hematopoietic system, or the vascular network of the gastro-intestinal tract, the genito-urinary tract or the brain.

So that the nature of drug eruptions and their allergic features may be understood, it may be well to emphasize herein a few distinctive points in summary.

The Patient

Concerning the rôle of the patient, it may be said that:

1. Drug eruptions are relatively rare.

2. Such eruptions are acquired reactions of idiosyncrasy occurring in certain predisposed individuals.

3. The mechanism of sensitization of such individuals is little known. Experimentally, the skin of man and animals can be sensitized to certain chemicals (mercury, orthoform, salicylates, arsphenamine, formaldehyde, extract of primulin or rhus and others).

4. Sensitivity of the individual is achieved after a variable period of incubation. This period may range in duration from days to years, depending on the nature of the drug, the dose, the frequency of exposure, and most of all, the degree of susceptibility of the individual. A tolerance of years may be interrupted suddenly by the occurrence of symptoms of sensitivity.

5. Once acquired, the state of sensitivity is usually permanent, although the clinical reactions may vary in character and intensity from time to time.

6. No circulating reagins can be demonstrated by passive transfer.

The Drug

Concerning the rôle of the drug in this condition, it may be said that:

1. No drug is free from sensitizing properties, although there is considerable variation among drugs in this respect. For example, some of the well-known drugs may be classed as in Table I.

2. Drug eruptions are distinct from the pharmacologic or toxicologic effects of drugs. Cumulative effects of drugs are not observed (except perhaps in the case of bromoderma and argyria). Graded doses of drugs do not precipitate reactions of equivalent degrees. Drug eruptions have no counterpart which can be measured on animals in the experimental laboratory.

3. It is commonly thought that the dose needed to precipitate a drug eruption must be higher than the usual therapeutic dose, but this is not so. If an individual is sensitive to a particular drug, even a trace of that drug may be sufficient to provoke the eruption.

4. Reactions of sensitivity may be limited specifically to a group of similar drugs, to a single drug, or to a particular chemical fraction of a drug.

5. The degree of chemical purity of a drug is not a factor in the production of drug eruptions.

6. Sensitizing drugs are often concealed in proprietary products (quinine in certain anodynes, phenolphthalein in cathartic agents or bile salts, acetanilid in certain commercial preparations for relief of headache and other pains).

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The Reaction

Concerning the reaction, it may be said that:

1. Drug eruptions appear in unusual patterns, the nature of which is influenced by the type of drug that is concerned, the reactive capacity of the individual and the quality of his skin.

2. Reactions are usually unexpected, with an abrupt onset.

3. Constitutional symptoms, as a rule, are mild. However, in severe reactions fever, malaise, bleeding and death may occur.

4. The character of the eruption is sometimes distinctive for certain drugs (bromide, iodide, phenolphthalein); more often it is not. These eruptions must be distinguished from the contagious exanthems and from such common diseases of the skin as pityriasis rosea, secondary syphilis, urticaria and eczema. In the condition under discussion there is such a wide diversity of cutaneous manifestations that a proper dermatologic background is required if the physician is to arrive at the correct diagnosis.

5. Sensitization may be epidermal, in which case the reaction will be eczematous in nature, as in contact dermatitis as caused by mercurials, procaine hydrochloride, quinine, solutions of formaldehyde and others.

6. Sensitization may occur in the cutis (the vascular network ?), in which case a symmetrical eruption will appear, chiefly urticarial in nature, but presenting at times all the forms of elemental lesions of the skin, including purpura. Often combinations of the above occur on various occasions.

7. The mucous membranes of the mouth, genitalia and perianal regions are frequently involved. Some eruptions referable to drugs, such as phenolphthalein, show a predilection for mucocutaneous junctions.

8. A not uncommon form of reaction is the "fixed drug eruption" in which there is focal sensitization of the vascular network underlying a circumscribed site in the skin. Multiple sites may be so affected, and these sites may include the mucous surfaces. On occasions, when the offending drug is brought by the circulation to these particular regions, a characteristic flare results with spreading erythema, edema, pruritus and finally pigmentation. Bullæ sometimes form. Certain drugs possess the power of producing reactions in the form of fixed eruptions. The most common of these are phenolphthalein, arsphenamine, antipyrine, aminopyrine, acetophenetidin and barbiturate drugs.

9. The diagnostic value of cutaneous tests (performed by the patch technic), in proving the

TABLE I. SENSITIZING CAPACITY OF COMMON DRUGS

Relatively innocuous	Moderate sensitizers	Potent sensitizers
Aluminum salts	Acetanilid	Arsphenamine group
Bismuth salts	Acetylsalicylic acid	Barbiturates
Boric acid	Antipyrine	Bromides
Cod liver oil	Arsenic	Iodides
Digitalis	Atropine	Gold salts
Ether	Cinchophen	Mercurials
Magnesium salts	Codeine	Quinine
	Morphine	Sulfamido group
	Phenolphthalein	Dyes
	Salicylates	
	Silver salts	

TABLE II. DRUGS, CUTANEOUS REACTIONS THEY PRODUCE, AND DISEASES THE REACTIONS SIMULATE

Drug	Nature of reaction caused	Resemblance to
Arsenic	Pruritic Erythematous Urticarial Eczematous Desquamative Palmar and plantar keratotic Spotted pigmented	Scarlatina Erythema muliforme Eczema Keratosis hereditaria Addison's disease
Arsenobenzol (arsphenamine)	Pruritic Urticarial Erythematous Papular Papulosquamous Exfoliative dermatitic Purpuric Fixed eruptive	Urticaria Erythema multiforme Morbilli Pityriasis rosea Erythroderma maligna Blood dyscrasia
Acetanilid	Erythematous Cyanotic, with methemoglobinemia	Scarlatina Cardiac disease
Antipyrine	Papular Fixed eruptive	Morbilli
Atropine	Eczematous (local) Erythematous	Contact dermatitis Scarlatina
Acetylsalicylic acid	Erythematous	Scarlatina
Barbiturates	Erythematous Papular Bullous Fixed eruptive	Scarlatina Morbilli Erythema multiforme
Bromides	Pustular Fungating	Acne Blastomycosis Tuberculosis verrucosa
Iodides	Rhinorrheic Cervical adenitic Same as reaction caused by bromides	Coryza
Mercury	Eczematous (local or general) Erythematous	Contact dermatitis Scarlatina
Phenolphthalein	Urticarial Fixed eruptive	Urticaria
Quinine	Eczematous (local or general) Erythematous Bullous	Contact dermatitis Scarlatina Erythema multiforme
Salicylates	Erythematous Papular Bullous	Scarlatina Morbilli Erythema multiforme
Silver	Slate gray pigmented	Cyanosis
Sulfamido group	Erythematous Urticarial Papular Purpuric Photosensitive	Scarlatina Erythema multiforme Morbilli Blood dyscrasia

nature of the offending agent, is limited to a few conditions, chiefly those in which the drug produces an eczematous reaction. Drugs concerned are atropine, arsphenamine(?), chloral hydrate, dyes, solutions of formaldehyde, iodine, iodoform, mercury, quinine, turpentine and the group of local anesthetic agents.

10. Common cutaneous reactions to some familiar drugs are presented in Table II, with the diseases of the skin which they simulate.

Comment

Inasmuch as drug eruptions possess such unusual qualities, diagnosis often must be made by means of exclusion. Dermatologists have a convenient rule of thumb which holds that an eruption, which appears unexpectedly, and in an odd design which does not fit the pattern of the familiar clinical entities, is either a self-induced factitious affair or a reaction of the patient's sensitivity to medication.

The physician may be too timid or too indirect in questioning the patient to permit him to arrive at the correct diagnosis. When the eruption appears on the skin and drugs are suspected to be causative factors, it is not sufficient to abide by the patient's denial of usage of drugs. Many persons consider the term "drugs" to apply only to habit-forming narcotic agents. Moreover, many sensitizing drugs masquerade as harmless proprietary preparations under the influence of forceful publicity. Consider, for example, arsenic and iodides in tonics, bromides in "nerve medicines" and in remedies for headache and colds, phenolphthalein in cathartic agents, bile salts, "liver pills" and medicated gum. Unless these sources of supply of offending materials are carefully ruled out by direct inquiry of the patient, in language he can understand, the history will avail nothing. In some instances, it would be well to disregard a seemingly irrelevant history when the diagnosis seems objectively to be self-evident, and occasionally, to obtain definite proof, it may be necessary to provoke another attack by giving the patient small amounts of the suspected materials. This should not be done in a casual manner to satisfy intellectual curiosity, for embarrassing reactions and perhaps dangerous consequences may result from such a procedure if it is employed without caution.

Appreciation of the significance of drug eruptions and other reactions to drugs is important to the physician who uses arsphenamine in the treatment of syphilis. Exfoliative dermatitis would be a rare complication of therapy for syphilis if the earliest evidences of the patient's intolerance were understood and the warnings heeded. In such cases of sensitiveness, as well as in others in which drug eruptions have been noted, some conspicuous notification should be placed in the clinical records and indelibly impressed on the mind of the patient. Too frequently such a patient feels, and perhaps rightly, that proper precaution had not been taken in the selection of drugs or in the matter of dosage for him, because he has no understanding of idiosyncrasy. The wise physician will remember always that certain individuals possess the capacity to react to medications in a peculiar way.

FRACTURES OF THE DISTAL HALF OF THE TIBIA AND FIBULA*

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THERE is no doubt that fractures of the lower half of the tibia have always and will always present a special therapeutic problem. This is especially true if these fractures are spiral or comminuted in nature.

A system for the treatment of fractures of the lower half of the tibia and fibula is to be presented: (1) because it has given uniformly good results; and (2) because it is simple, and it is easy to carry out.

Transverse fractures need little discussion except to point out that the fragments should be restored to complete or nearly complete anatomical position. A simple technicality frequently overlooked in the process of reducing the fracture is failure to compare the injured extremity with the normal one. Special attention should be given to the bowing of the tibia, which normally

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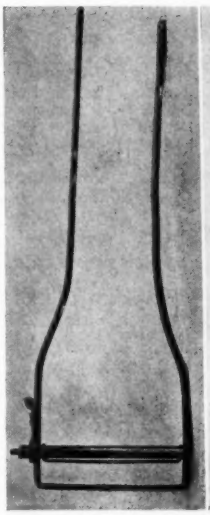

Fig. 1.

Fig. 2a.

Fig. 2b.

Fig. 3a.

Fig. 3b.

Fig. 4a.

Fig. 4b.

Fig. 5.

Fig. 6.

Fig. 7a.

Fig. 7b.

may or may not be present. After reduction the extremity should be immobilized in a plaster-of-Paris cast. This cast should extend from the toes to the groin. The knee should be held in a position of from thirty to forty degrees flexion. This will prevent rotation of the fragments between the knee and the ankle. The foot is placed at right angles to the leg and in slight inversion. A mistake commonly made is failure to flex the knee sufficiently and failure to extend the cast to the groin. Many times a cast is seen which extends only six or eight inches above the knee. Immobilization of this type does not prevent rotation at the fracture site and frequently results in non-union.

Spiral fractures present quite a different problem in that reduction cannot be maintained in quite such an easy manner as in the case of transverse fractures. Therefore some other form of immobilization has to be used in order to maintain reduction. For these fractures the following proceedure has been carried out. First a

Steinman pin is inserted through the os calcis and the necessary dressing applied. With the aid of two or more assistants or a fracture table, the leg is placed in correct alignment and the knee is flexed to about sixty degrees. A plaster-of-Paris cast is then applied, holding the leg in this position. The foot is not included in the cast other than extension of a plaster splint over the dorsum of the foot. This extension of plaster goes beyond the toes to prevent the bed clothes from bearing down on the toes and it is also used later to help prevent a foot drop. An ordinary gauze bandage is used to support the foot. A stirrup (Fig. 1) containing a windlass is then incorporated in the cast. This stirrup is placed in the position of the lateral alignment of the tibia. Two strips of flexible material are then fastened to the Steinman pin. The anterior-posterior alignment is then completed and in this position the strips for traction are placed in the windlass and traction is made. Apposition and alignment are spontaneous. The leg muscles are well relaxed because of flexion of the knee. The thigh serves to give counter traction. Sufficient traction is made to obtain correct length. This is maintained until there is evidence of callus formation. The Steinman pin and the traction are then removed and a new cast is applied extending from the groin to the toes. The knee is held at about thirty degrees of flexion. When sufficient callus has formed to assure union, a short leg cast is applied and changed when necessary for the remainder of the period of immobilization. During the last few weeks of immobilization a walking iron incorporated in the cast may be used to good advantage.

In one case, as illustrated, the patient sustained a spiral fracture of the tibia and fibula as is shown in Figure 2. There is considerable overriding of the fragments as well as a marked amount of separation laterally. Figure 3 shows the result five months after injury. This patient was able to bear full weight without the aid of crutches six months after the accident.

This method of immobilization has worked equally well in cases of severely comminuted fractures of the lower half of the leg. The accompanying illustrations represent a case of a severly comminuted fracture of the tibia and fibula, with extension of the fracture into the ankle joint. Figure 4 shows the original fracture. Figure 5 illustrates a lateral view after reduction and Figure 6 shows the anterior-posterior view after reduction. The last illustration (Fig. 7) shows the end-result. This radiograph was taken eight months after the accident. There was no permanent disability.

Conclusions

1. The abnormal leg should always be compared with the normal.
2. Immobilization for fractures of the tibia should be obtained by a plaster-of-Paris cast applied from foot to groin.
3. The optimal positions in which to immobilize the knee and ankle in case of fractures of the tibia and fibula is discussed.
4. A simple, expedient, and relatively mobile method for the treatment of the difficult fractures of the lower half of the tibia and fibula is described.

TUBERCULOSIS MORTALITY AMONG WOMEN

As long as reliable mortality statistics for tuberculosis have been known, young women have always been more prone to die of tuberculosis than have their young brothers or older sisters. While the general death rate from tuberculosis has steadily fallen, the death rate among young women has also decreased, but at a slower rate. The fact remains that tuberculosis is prevalent enough, particularly among young women to warrant, in the opinion of many authorities, a tuberculin test on all pregnant women. Treatment of tuberculosis has advanced so rapidly in recent years, that with early recognition of the condition in pregnancy, it is possible in many cases to bring the baby through safely with no danger to the mother.—National Council for Mothers and Babies.

DIAGNOSIS AND TREATMENT OF CONDITIONS ASSOCIATED WITH VARICOSE VEINS*

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IN presenting this subject I am particularly interested in laying special emphasis on conditions encountered with varicose veins at the time of examination and in making suggestions regarding their treatment rather than the treatment of the varicose veins and complications resulting therefrom. During the last ten years much has been written about the diagnosis and treatment of varicose veins. Whether injection alone, single ligation at the juncture of the saphenofemoral veins, and multiple incisions to care for the incompetent communications of the deep system or combined surgical and injection treatment is the procedure of choice remains for the future to decide. Personal experience of many engaged in the work eventually will eliminate the procedures which results have proved inadequate.

Patients presenting themselves for examination of the extremities often have changes of the skin which are either directly attributable to incompetency of the veins or secondarily present as the result of local pathologic conditions. The contributing factors to the latter come from intercurrent complications arising either as a result of the varicosities or from extrinsic factors such as excessive weight, lymphatic occlusion, thrombophlebitis in varying degrees, traumatism and local infections. Among the more frequent conditions which I would like to discuss are changes in the skin varying from small discrete patches of eczema to diffuse involvement of the leg and ankle with occasional extension along a varicose vein onto the thigh. Patients afflicted with localized dermatitis usually give a history of varicose veins of many years' duration with local changes taking place at a subsequent date. Occasionally a patient will be seen who does not have any perceptible edema and only a small incompetent varix leading into the region, but who complains of itching. If the itching is of any duration, a thickened pigmented skin results and in turn a typical neurodermite develops.

Stasis Dermatitis

In the early stages of stasis dermatitis generalized edema of the skin with scaling is observed on the lower third of the extremity and the ankle. This gradually ascends as involvement becomes more marked. Essential characteristics are edema, crusting, weeping and marked itching.

Obliteration of the existing varices in the less extensive cases usually relieves the local itching. Application of 3 per cent ichthyol in zinc oxide ointment with a sponge pad or elastoplast bandage at intervals of five to ten days usually suffices. When a diffuse eczematous condition exists, the patient should be hospitalized, the leg elevated at least 30 degrees and cold applications of 0.5 per cent solution of aluminum subacetate should be used. This procedure not only relieves the excessive irritation of the skin but the edema of the leg. Sclerosing treatment of the incompetent vein is then begun and supportive bandages should be worn during and following the course of treatment for at least several weeks or months depending on the individual circumstance.

The presence of eczema and changes in the skin often obscure the basic cause. Incompetent veins are not always in evidence on the extremity or in the thigh. In many instances the great saphenous veins cannot be seen in the thigh but by manual palpation incompetence may be discerned which is indicative of a reversed flow of blood column and stasis with dermatitis ensues.

Brawny Infiltration

When local superficial lymphangitis of varying degrees has occurred, the inflammatory process results in destruction of the superficial lymphatics, and subcutaneous atrophy with discoloration and fibrosis occurs.

If extensive lymphangitis or cellulitis has appeared, annular constriction with lymphatic edema may be found below the involved region. Regions of brawny infiltration which are associated with impairment of nutrition and lowered resistance are fertile fields for ulceration and

*From the Section on Postoperative Care, The Mayo Clinic, Rochester, Minnesota. Read before the Meeting of the Upper Mississippi Medieal Society, Cass Lake, Minnesota, August 10, 1940.

infection. Protective measures should be employed to prevent traumatism and if edema is more or less extensive, pressure pads of gauze or rubber sponge should be snugly bound to the leg by a good fabric bandage to facilitate circulation to the part.

Ulcers

Ulcers of the extremities occur from various causes and are often confused with varicose ulcers in the presence of varicose veins. Ulcers of fungus origin, such as blastomycosis, may be mistaken for ulcerous lesions of medicinal origin such as those caused by bromides or iodides. The treatment consists of administration of iodides, roentgen therapy and local treatment with iodine, electrocoagulation, carbon dioxide and deep freezing peroxide sprays.

Ulcers arising from local infection, such as insect bites or local trauma, ordinarily respond to local treatment and resolve in a relatively short time. Ulcers arising from medicinal basis respond by elimination of the drug. When they are infected secondarily, they may exist for a long period and may be mistaken for true varicose ulcers.

In cases of malignant ulcer in the presence of varicose veins with or without edema, there is usually a history of a small ulcer at the beginning and of gradual extension over a period of a few months to several years. The border of the ulcer appears blanched in contradistinction to varicose ulcers in which the edges are irregular and thick, and are usually discolored. In such cases biopsy should be performed and if the ulcer is malignant, surgical or radiotherapy or both should be instituted.

Ulcers Resulting from Arteriovenous Fistula.—"Hot ulcers," a term used to distinguish the arteriovenous ulcer from the ordinary varicose ulcer, are characterized by marked increase of local heat in the presence of edema and beginning atrophy. The arterial supply to the part is short-circuited and if many fistulous arteriovenous communications exist, ulceration occurs at the dependent part. Such ulcers are painful regardless of the type of treatment employed.

Elevation of the extremity does not relieve the condition as it does with true varicose ulcers and dependent positions intensify the pain. My experience has been that a bandage of heavy material and a level position seem to afford the best relief.

Syphilitic Ulcers.—Blood tests for syphilis reveal the origin of these ulcers. In addition the syphilitic ulcer has certain changes in the border that are suggestive of the etiologic factor although they are not clearly diagnostic objectively. The border of the ulcer is arciform and markedly indurated. Usually only a single ulcer is present. Specific treatment is consequently indicated.

Thrombophlebitis

Much has been written in textbooks and original papers regarding the hazards of treatment of varicose veins in the presence of thrombophlebitis. In a series of 491 cases in which treatment for varicose veins was given, 12.5 per cent of the patients attributed the cause to phlebitis. My first experience in treating varicose veins in the presence of acute thrombophlebitis occurred in 1931. The patient had rather mild, acute phlebitis of the left great saphenous vein after subtotal abdominal hysterectomy. Examination revealed two discrete regions of phlebitis along the course of the vein on the nineteenth or twentieth day after operation. The patient was not experiencing any systemic symptoms. I injected a minimal dose of sclerosing fluid into the vein in the middle and upper thirds above the sites of involvement. Undue symptoms were not noticed in the course of treatment. Since that time at the clinic we have disregarded phlebitis as a serious contraindication to the treatment of varicose veins with two exceptions: (1) when a systemic reaction such as fever, marked local redness and swelling are present, we wait until the activity has subsided and resolution is fairly well advanced; and (2) when swelling of the extremity and enlarged compensatory veins are noted, the deep circulation is always tested for adequate return of the venous flow. If no pain occurs after the patient has worn an Esmarch rubber bandage snugly applied from the toes to the knee for twenty minutes or so, the occlusion which is manifested by the dilatation of the collateral veins, is not sufficient to render treatment of the varices inadvisable.

Migratory phlebitis[2] may be differentiated from the usual thrombophlebitis for it varies both in its incipiency and recurrent tendencies. The

patients will present a small, tender, superficial patch which runs parallel to the vein with some perivascular lymphatic involvement. As the name suggests, new lesions appear frequently and the old ones may recur and subside. If it is extensive, slight rise in temperature may occur. In this condition the wall of the vein seems to be affected rather than the lumen and on palpation the vein seems to be of a cord-like nature. The lesions appear in segments of the vein and because of this tendency an infectious origin is suggested. Superficial veins usually are involved. The recurrence is of a migratory nature and a continuous regimen of treatment for from a few weeks to months may be necessary. This regimen consists of hospitalization, elevation of the extremity and application similar to those used in the treatment of ordinary thrombophlebitis.

Miscellaneous Conditions

Arteriovenous fistula in the presence of varicose veins is not always easy to diagnose, if there are no local changes in the skeletal structure such as enlargement of the bones or lengthening of the extremity. Bruit and thrill which are given in textbooks as positive signs of arteriovenous fistula, are not detectable in the majority of cases of congenital arteriovenous fistula. If varices fail to sclerose after successive doses of a number of sclerosing agents, arteriovenous fistula should be suspected. Study of the oxygen in the blood will clarify the diagnosis. If the oxygen content of the venous blood in the varix is more than 65 or 70 per cent, arteriovenous fistula is probably present.

Muscle sheath hernias appear as single or multiple protrusions on the lateral and posterior surfaces of the lower extremities. They are easily distinguished from varicose veins by having the patient stand on the toes for extension and then on the heels for flexion. In each instance the protrusion disappears if a muscle sheath hernia is present. If the protrusion still persists, varicose veins are probably a factor.

Baker's cysts of the popliteal space occasionally are found in the course of examination of varicosities. The fact that the lateral saphenous veins and the plaque of dilated veins from the great saphenous veins may be in the immediate region, may confuse the examiner and the cyst may be considered a part of the varicose involvement. Ruling out the presence of a cyst in the popliteal space will prevent complications. Such cysts are filled with synovial fluid and for that reason an accidental injection into the cyst might cause serious complications. To differentiate a cyst from varicose veins the patient should be placed in the prone position and the leg flexed to reduce the volume of fluid in the varices. If there is a marked prominence at this time, the chances are that a cyst is present. If this simple test is not conclusive a hypodermic needle should be inserted in the prominence and fluid withdrawn. If synovial fluid is obtained, the diagnosis is clinched.

Tuberculous lesions and erythema induratum are rarely encountered in varicose vein therapy. However, the possibility of such lesions should be kept in mind when indurated subcutaneous nodules are present which are tender to the touch. In such cases after several weeks or possibly months redness and occasional fluctuation with final necrotic surface may occur. These lesions are found for the most part on the posterior surface of the legs. Treatment consists of supportive bandaging, local topical applications of an antiseptic nature, tuberculin regimen and general systemic measures to increase body resistance.

Erythema nodosum is manifested by tender nodular lesions which may appear red and gradually fade to a purplish hue when receding. They usually are situated on the anterior surface of the legs. The trunk and arms are occasionally involved. Clinical examination usually reveals fever and the history of arthritis although in the persistent type of the disease, tuberculosis is a frequent cause. As for treatment, the administration of salicylates, local astringents, rest, and so forth are the usual procedure.

Pyoderma gangrenosum[1] is characterized by discrete pustules which enlarge and necrose. If there are many in a small region, they coalesce in a crusting ulcer. The edges may be undermined and the contour is usually oval. When such an ulcer is found there is likelihood of its being secondary to some internal systemic infection. It has been suggested that ulcerative colitis may be a factor. Hemolytic streptococcus and staphylococcus have been isolated from the ulcer. Treatment consists of endeavoring to find the invader and then to treat it. Various local treatments have been tried with some degree of suc-

cess; these consist of specific serum and topical dressings, heliotherapy, and so forth.

Summary

I have attempted to call attention to possible associated conditions in the presence of varicose veins and to discuss their treatment not in detail but sufficiently to put the physician on guard against committing undue errors in management. Whenever systemic involvement is associated with lesions of the extremities, treatment for varicose conditions should be deferred.

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METASTASIZING ARGENTAFFINE TUMOR OF THE CECUM IN A CASE OF MULTIPLE COLONIC MALIGNANCIES*

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ALTHOUGH there are a great many reports in the literature concerning cases of carcinoid tumors of the appendix, tumors of this type occurring elsewhere in the gastro-intestinal tract are relatively rare. Evidence of extension from the site of origin of these tumors is even less commonly encountered. Wyatt, in 1938, reported a case of "multicentric carcinoid" of the cecum in which the tumor had metastasized to the liver. Including the case of Wyatt, only nine cases of this type of tumor of the large bowel have been reported, of which only three have been found to have either local or distant metastasis. Of the cases of carcinoid tumors of the appendix, only five have been found to have extended beyond the organ itself, although many such tumors have been reported on in the literature. Only thirty-six cases of this type of tumor of the small intestine in which extension was found on examination have been reported. Because of the relative rarity of extension in this type of lesion, particularly when the lesion is situated in the large bowel, it was felt that the following case would be of interest.

Report of Case

The patient, a white woman fifty-five years old, was admitted to The Mayo Clinic on March 11, 1939, complaining of pain in the left lower quadrant of the abdomen of about three and a half years' duration. On two or three occasions she had passed bright blood per rectum. Associated constipation of considerable degree was present, so that it had been necessary for her to use enemas almost daily. Physical examination revealed essentially normal observations. Proctoscopic examination showed that a polypoid carcinoma was situated 10 cm. above the dentate margin; the lesion involved the left and posterior walls of the rectum. This lesion extended for 16 cm. proximal to this point. Biopsy revealed the tumor to be an adenocarcinoma, grade 1. Because of the presence of this lesion in the rectum, roentgenologic examination of the colon was not made before operation, since it was desired to prevent possible obstruction which might have resulted from the retention of barium proximal to the rectal growth had such an examination been attempted. The plan was to perform a one-stage combined abdominoperineal resection.

On March 13, 1939, a primary left rectus incision was made. Examination of the rectosigmoid revealed a neoplasm as described at the time of proctoscopic examination; it was attached to the lower portion of the uterus as well as to both fallopian tubes and ovaries. The liver and gall bladder were normal to palpation. Examination of the cecum revealed a small mass, about the size of a golf ball, situated in this region close to the ileocecal valve, and there were palpable glands in the right part of the mesocolon. It was felt that this lesion unquestionably was another carcinoma. Accordingly, one-stage resection of the right portion of the colon was performed and an end-to-side ileotransverse colonic stoma was made. Single barrel colostomy, after the method of Lahey, also was performed, so that in the future the second part of two-stage abdominoperineal resection could be accomplished.

The patient's convalescence was excellent following this procedure, and on April 13, she underwent the second part of the combined abdominoperineal resection. The inflammatory reaction around the rectal lesion was much less this time than it had been previously, a fact

*From the Division of Surgery (Mayo), The Mayo Clinic, Rochester, Minnesota, and The Mayo Foundation (Wilson).

which enabled the surgeon to strip the uterus and right fallopian tube free without any difficulty. It was necessary, however, also to remove the left fallopian tube.

Progress of the patient after performance of this procedure was satisfactory and she left our care on May 11 in excellent condition, having gained several pounds since undergoing her last operative procedure. She was seen again February 20, 1940, at which time her general condition was excellent and there was no evidence of any malignancy.

Fig. 1. Grade 2 adenocarcinoma of the cecum of the so-called carcinoid type.

On gross pathologic examination of the cecum, the tumor (fig. 1) was found to measure approximately 4 cm. in diameter; it presented a characteristic orange-colored appearance on cut section. The neoplasm was situated approximately a half inch (1.27 cm.) from the base of the appendix and this rudiment was not involved. On histopathologic examination (fig. 2) it was found to be an adenocarcinoma, grade 2, of the "carcinoid" type with involvement of the regional lymph nodes. The cells of this tumor were found to contain granules which reduced silver. Pathologic examination of the tissue removed from the rectum showed the tissue to be polypoid carcinoma, grade 1, without glandular involvement.

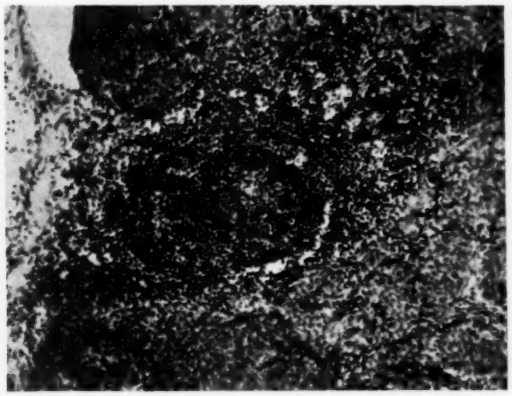

Fig. 2. Section of same tumor as that shown in Figure 1. The cells of this tumor contained granules which reduced silver (hematoxylin and eosin; x135).

Summary and Conclusions

It is generally conceded at present that the so-called carcinoid tumors arise from the Kultschitzky cells which are found in the base of the crypts of Lieberkühn. The ability of the cells of this tumor to reduce silver provides the surgeon with a postive means of diagnosis, although if ordinary hematoxylin and eosin preparations are used, the arrangements of the cells in groups will be characteristic enough. On gross examination the surgeon may gain an impression of the nature of the tumor by the yellow color which, in most instances, is present. Although there are those who still deny the malignancy of carcinoid tumors, it becomes more obvious as more cases are reported that actually they are true carcinomas.

Reference

1. Wyatt, T. E.: Argentaffine tumors of the gastro-intestinal tract: report of three cases; one with distant metastases. Ann. Surg., 107:260-269, (Feb.) 1938.

In a ten-year tuberculin-testing program in rural and town schools in four counties in Minnesota the percentage of reactors has fallen from 14.1 to 6.75 per cent. The decrease is attributed to a careful follow-up of all positive reactors, with an intensive search for the source of the infection. Contact with open cases of tuberculosis was broken by hospitalization of the case or placing the children in a home free from tuberculosis. All teachers and school personnel were included in the plan.

CASE REPORT

CONTACT DERMATITIS DUE TO NAIL POLISH

WILLIAM SAWYER EISENSTADT, M.D.
Minneapolis, Minnesota

NAIL polish was introduced some twenty years ago. However, not until 1937[1] was there any report in the literature of contact dermatitis due to nail polish. The absence of reports and its sudden appearance in the literature indicate that nail polish as a cause of dermatitis has been overlooked. The reason, however, is self-evident because of the peculiar distribution of the eruption. Even though the nail polish is applied on the fingernails, the eruption usually appears on the eyelids, face, neck or arms.

Case History

Miss H. O., aged thirty-two, was referred on January 8, 1941, because of an eruption of one year's duration. The dermatitis involved both alæ nasæ, both eyelids, and the right side of the face extending to the lobe of the right ear. The eruption was somewhat patchy in distribution, erythematous and scaly, with very mild evidence of vesiculation.

The patient stated that the eruption first appeared in December, 1939. At that time she complained of intense itching, puffiness of the eyelids, and a burning sensation on the right side of the face. Aside from an acute episode of hives, which she ascribed to the ingestion of tomatoes ten years previously, her familial and personal allergic histories were negative. The patient's occupation was that of a buyer in a department store where she handled fabrics, mostly rayon and printed cotton. The character and location of the eruption did not suggest an atopic etiology. A contact dermatitis was suspected, especially one due to cosmetics.

Patch tests of the following substances were applied: lipstick, face powder, perfume, cologne, mascara, rouge, rayon, soap, printed cotton, and nail polish. The patient was instructed to return in forty-eight hours, but was to remove any patch test that itched considerably. After thirty-six hours, the itching at the site of the nail polish patch test became so intense that she removed it. When the patient reappeared in the office that same afternoon, an elevated papulovesicular plaque was noted at the site of the nail polish patch test. All the other patch tests were negative. The patient was then instructed to remove her nail polish. Under mild local therapy, the dermatitis disappeared within three to four days. The patient was then tested with the clear lacquer base and a different shade of the same brand of polish. Both of these patch tests were markedly positive, indicating that it was the lacquer base and not the dye which was the cause of the dermatitis.

Discussion

The above case illustrates many points. First of all, any skin eruption, atypical in character, location, and distribution, should be suspected of being due to contact to an offending substance. Second, contact dermatitis can be exceedingly polymorphous[2] in character, varying from an erythematous to a vesicular or pustular eruption. Third, in all cases where cosmetics are suspected as a possible cause of a dermatitis, nail polish should be included in the testing.

References

1. Sulzberger, M. B.: Hypersensitivity to nail polish. Arch. Dermat. and Syph., 36:460, (Aug.) 1937.
2. Tuft, Louis: Clinical allergy. Philadelphia: W. B. Saunders Company, 1938. Page 512.

TRANSMISSION OF BACTERIA IN VENTILATING SYSTEMS

In present-day air conditioning systems 90 per cent of the cooled air is often recirculated. The redistribution of air from an infected space to noninfected areas might conceivably become a factor in the spread of disease. In a recent study† of the rôle of ventilating systems in the transmission of microörganisms, bacteria (B. subtilis spores), which can be readily distinguished from other organisms usually found in air, were introduced in two different ventilating systems and the distribution of the spores was studied. The first ventilating system, which was provided with a paper-tissue filter, was located in a small auditorium. In one instance the spores were introduced beyond the filter and were thus not filtered, and in another experiment the spores were introduced in front of the filter and the air carrying them was filtered before being circulated. Fifteen minutes after the spores were introduced beyond the filter, analyses indicated the presence of 21.9 organisms to 10 cubic feet of the air in the auditorium. One hour after the spraying of the spores no organisms could be found in the air. Fifteen minutes after spraying spores in front of the filters only 3.7 organisms were present in 10 cubic feet of the air and after an hour these too had disappeared. In another series of experiments spores were introduced at different points in the ventilating system of a large building. Analyses of the air in two rooms of the building showed a maximum concentration of organisms during the spraying, which in these experiments lasted for a twenty-minute period or during a short period (one-half hour) thereafter. The number of organisms then decreased rapidly and within a relatively short time the count returned to a normal level. This rapid decrease is attributable to the dilution factor, and to the action of the filter, as well as to the loss occasioned by surfaces such as the walls and floor. These experiments were made under the most favorable conditions for the transmission of bacteria in ventilating systems, the number of spores being far in excess of that which might be possibly expected to occur normally and the spraying being done at advantageous points, and they demonstrate that bacteria may be spread in this way, although the menace seems slight. The problem merits further study from the point of view of public health.

†Dalla Valle, J. M., and Hollaender, Alexander: A Study of the Rôle of Ventilating Systems in the Transmission of Bacteria. Pub. Health Rep. 55:1268, (July 12) 1940.

HISTORY OF MEDICINE IN BROWN COUNTY

Compiled by George B. Weiser, M.D.

THE medical profession was well represented in the early settlement of Brown County, which was created by an act of the Legislative Assembly of the territory in February, 1855. According to well-established tradition, Brown County was named in honor of that picturesque frontier character, Joseph Renshaw Brown, early legislator, Indian agent, soldier, newspaper publisher, inventor, founder of cities and all round leader of men. Even for these days, with their broad stretches of unoccupied land, it was a county of tremendous proportions, covering approximately 42,000 square miles of territory and embracing all that part of what is now Southwestern Minnesota between the Iowa boundary on the south and the Minnesota River on the east and north, and in addition thereto all that part of what is now South Dakota lying east of the Missouri River and north of Sioux City.

In the time of its creation the only white settlers within its vast borders, excepting, of course, those attached to the government agencies and the Indian Missions on the new Sioux Reservation, were the thirty or more men, Germans, who had come out from Illinois the previous fall for the purpose of establishing a townsite for the Chicago Land Society. Partly because of the lateness of the season, they had located for the winter in a sequestered spot along the Minnesota River in what is now the township of Milford. These were the settlers who, with the arrival of some twenty additional members of the society about the middle of the following May, founded the town of New Ulm just a little more than three months after the county's creation.

In February of the following year the newly established village was officially designated as the county seat. Unlike the many other towns which had come into existence in the southern part of the territory immediately following the promulgation of the treaties of Travers des Sioux and Mendota, New Ulm can hardly be said to have been a hit-and-miss settlement, which just happened and then grew up. Instead, it was a carefully planned colonization effort in which two distinct organizations played an important part—one, the Chicago Land Society, organized in 1855; the other, the Turner Colonization Society, which came into being a year or two later.

Both of these organizations were made up almost entirely of Germans, many of them being emigrants who had been compelled to flee the old country as a result of the failure of the liberal revolution in Europe in 1848. They were all well schooled and among them was a very large percentage of highly trained artisans.

They came here at an inopportune time, during a period of great business depression. The urge which prompted the organization of their societies was practically the same in each instance—dissatisfaction with economic conditions, disgust with the welcome accorded them by the older settlers and an almost universal desire among them to found a community somewhere on a new

frontier where they could work out their social and economic problems in their own way, free from the bigotry and class hatred which characterized their first introduction to American equality and freedom. The Know-nothings, a secret political party in the United States in 1855, were opposed to foreign immigrants. Their principal tenets were opposition to the naturalization of foreigners and to their eligibility to hold office. They also advocated uncompromising antagonism to Roman Catholicism. Many of these early settlers were of that Christian faith. This society flourished in Chicago and in the East, and made it very unpleasant for foreigners.

The first step, as we have seen, was taken by the Chicago group in the founding of New Ulm in 1855. The next year representatives of the Cincinnati Society appeared on the scene and by reason of their stronger financial setup, were easily able to take over the original townsite by purchase and bring about a harmonious merger of the two organizations. Nothing like a deal of this kind, as far as we know, has ever occurred in Minnesota history. From this time on, for several years at least, the sun seemed to shine on the pioneer adventure. Kindred spirits in all parts of the old frontier were attracted by the courage and initiative of these resolute pioneers, and the growth of the new community was unusual.

In 1857, for example, when the town was only two years old, the special census shows a population of 478. In 1859 the first newspaper was started. There were fifty-four births in New Ulm that year. In 1860, when the regular census was taken the population was 635, the total population of Brown County being 2,300. During the Indian Massacre nearly 200 buildings were burned, either by the Indians, or by the defenders, to prevent them from falling into the hands of the attacking savages. All that remained standing were the twenty-five or thirty buildings within the barricades. Within these had to be crowded some 1,500 inhabitants, refugees and neighborhood defenders.

Outside physicians and surgeons who came to the aid of New Ulm during the second attack were Dr. Asa W. Daniels of Saint Peter, who had been one of the earliest surgeons at Fort Ridgley and later the government surgeon and physician for the Lower Reserve; Dr. Wm. R. McMahon of Mankato; Dr. Otis Ayer of Le Sueur, and Dr. W. W. Mayo of Le Sueur, father of the famous Mayo Brothers of Rochester.

In the early nineteen hundreds Dr. Valin, pathologist at St. Peter Hospital, started a class for practical instruction in bacteriology and urinalysis at New Ulm. This class consisted of Dr. O. C. Strickler, Dr. L. A. Fritsche and Dr. George B. Weiser. Dr. Valin came to New Ulm every week for a period of several months. He was an able instructor but somewhat irritable and eccentric at times.

During the early years the following practiced midwifery in New Ulm and the surrounding country: Frau Ottomeyer and Mrs. Schmidt in New Ulm; Mrs. Gluth in Milford township, and Mrs. Kloecke in Sigel township.

Hospitals of Brown County

It was largely as a result of the diphtheria epidemics in the eighties that interest was aroused among the residents of New Ulm in building the **Saint Alexander Hospital.** Rev. Alexander Berghold, who was instrumental in starting definite action, solicited the citizens for funds and met with generous response.

A house and lot were contributed by Mrs. Mary Schulz and the hospital was opened in 1883, with a capacity for twenty patients. Whatever the equip-

ment was, we know at least that it provided "Warmbäder, Kaltbäder, Turkish-bäder" and that the "Preis von 25c für ein gewöhnliches Warmbad ist ein so niedriger dass sich auch der Aermster diese Wohlthat zu gniessen im Stand ist." The first house physician was Dr. O. C. Strickler. Other staff members were Drs. L. A. Fritsche, Jacob L. Schoch, C. B. Hirsch and George B. Weiser.

The Saint Alexander Mutual Aid Society was organized at about the same time the hospital was opened. The membership fee was 50 cents a month for men and 25 cents a month for women, in return for which the members received free hospital service in case of illness.

The Saint Alexander Hospital in 1884 was renamed the **Loretto Hospital.** It was conducted by the Poor Handmaids of Jesus Christ, and was started with a staff of six Sisters from the Provincial Mother House, Fort Wayne, Indiana. Venerable Mother Prudentia was the first Mother Superior.

The rapid growth of the hospital services necessitated a new addition in 1886, a third addition in 1900, and a fourth in 1911.

On November 27, 1912, the corner stone of the present Loretto Hospital was laid by Rev. Father Schlinkert, and on June 15, 1913, the building was dedicated by Archbishop John Ireland.

The present building is of modern, fireproof construction and is equipped with all modern appurtenances necessary for a standard hospital. It has a bed capacity for forty-five patients, with eight bassinets. A home for the aged with a bed capacity of fifty-six is maintained in a separate building. All practicing physicians in New Ulm are members of the hospital staff.

Union Hospital, opened to the public in 1914, was established through the agency of the Protestant people in the community and was organized as a stock company with directors and officers.

The hospital is housed in a three-story, fireproof building and has a capacity of sixty-two beds and nine bassinets. All physicians practicing in New Ulm are members of the staff. Union Hospital is thoroughly equipped and standardized to conform with the regulations of the National Hospital Association.

Saint John's Hospital at Springfield, Brown County, was founded in 1901 through funds obtained by subscription. It has a capacity of nineteen beds and five bassinets.

Sickness and Epidemics in Brown County—1860-1900

The *Saint Peter Tribune* of February 22, 1865, stated that there were fifteen cases of smallpox in and around New Ulm. In 1867 smallpox broke out in New Ulm in a violent form. In 1869 the *New Ulm Post* reported more illness among the children than at any time since 1862. There were seven or eight deaths resulting from summer complaint.

A newspaper reference in 1876 notes a fatal malady among the children which had caused a number of deaths. Dr. Berry believed it to be an aggravated form of sore throat caused by damp weather and impure effluvia from the gutters and cesspools. The following year there were several newspaper references to the fact that Dr. Berry was well supplied with fresh vaccine virus and would gratuitously vaccinate all those who applied. This may or may not have been an indication of smallpox in the vicinity. At any rate it shows a greater consciousness of preventive measures.

In 1879 there was an outbreak of diphtheria in Iberia, Stark and Cottonwood townships. Early in 1880 the *New Ulm Post* stated that three of the most afflicted families in Sleepy Eye had lost a total of fourteen children within four-

teen days. In Mulligan township nineteen children had died within three weeks. The following June several physicians from Brown County and Blue Earth County met to discuss the situation. Occasional deaths still occurred throughout Brown County during the fall and by January of the following year another epidemic was well started. This continued through the year 1882 and in the winter of 1883 cases occurred in all sections of the county. New Ulm seems to have had few cases in proportion to its population. This may have been due to the fact that the rural communities did not have the benefit of local Boards of Health and that quarantine was less strict.

In 1885, 1886 and 1887 there were scattered cases. Diphtheria seemed to be the disease which affected the county to any extent and it was largely due to concern over the fatalities resulting from this disease that the first hospital was established in New Ulm.

Scarlet fever and diphtheria prevailed during the nineties and throughout the next few years various counties were affected. In the winter of 1893 there were a number of cases in Stark and Sigel townships. In Sleepy Eye alone twenty-three cases of diphtheria were reported. Dr. Fritsche, health officer of New Ulm, reported that scarlet fever had been prevalent to a small extent for many years in New Ulm but did not become epidemic until September 18, 1892. Unfortunately the first cases were not reported to the authorities because of fear of quarantine. On December 2 sixty-two families in the city had been affected and the City Council enforced a rigid quarantine regulation. This regulation met with opposition from the Lutherans of the city since it interfered with regular gatherings of the congregation. Before the regulation went into effect twenty-one families had been attacked. Three weeks after enforcement of the regulation there were only three cases. By April 2 there had been 210 cases and twenty-six deaths. The majority of cases were among children under ten years of age.

Activities of the health officer also included the examining and killing of glandular horses in Sleepy Eye. The health officer in Sleepy Eye at that time was Dr. J. W. B. Wellcome. Those who served New Ulm from time to time were Drs. Weschcke, Fritsche and Strickler.

Brown County Medical Society

The Brown County Medical Society was organized October 8, 1895. All the physicians of the county were present at the organization of the Society except Doctors Rothenburg and Adams.

The following were the first officers:

President—Dr. J. W. B. Wellcome, Sr.
Vice President—Dr. C. B. Hirsch.
Secretary—Dr. O. C. Strickler.
Treasurer—Dr. T. Sullivan.
Executive Committee—Dr. L. A. Fritsche, Dr. J. W. B. Welcome, Jr., and Dr. T. Sullivan.

In January, 1896, there was another meeting at which Dr. Pucklitsch read a paper on the cause and treatment of pneumonia. The newspaper account said that the Society would hold its regular monthly meeting, so we may conclude that the organization was pretty well established. This meeting was attended by physicians from Redwood County and other surrounding localities. Dr. George B. Weiser read a paper on "Infectious Diseases."

At a later meeting of the Society Dr. Todd of Minneapolis and Dr. McDavitt of Saint Paul read papers. Dr. Weiser read a paper on "Administration of Anesthetics."

Redwood-Brown County Medical Society

During the World War the charter of the Brown County Medical Society was revoked by the arbitrary ruling of the State Medical Association. Charges of disloyalty were preferred, but there was never an investigation made to sustain the charges, nor could disloyalty have been substantiated among the members. After the war the State Association, without apology for the actions taken in revoking the Society's charter, requested the former members of the Brown County Medical Society to re-organize under the name of the Redwood-Brown County Medical Society.

On December 23, 1919, at the office of Dr. J. C. Rothenburg at Springfield, the members of the former society met to organize the new society. Dr. Rothenburg acted as temporary chairman and it was moved and carried that the temporary organization be made permanent. The following officers were then elected:

President—Dr. C. C. Walker, Lamberton.
Vice President—Dr. E. Jamieson, Walnut Grove.
Secretary-Treasurer—Dr. W. A. Meierding, Springfield.
Board of Censors—Dr. J. Adams (3 yrs.), Dr. M. Sundt (2 yrs.), Dr. Mary Strickler (1 yr.).

The Society at the present time (1940) is in a flourishing condition, having thirty-one members. Quarterly meetings are held with papers and discussions by outside physicians from the University of Minnesota, and the Mayo Clinic as well as by local physicians. Attendance of the full membership is usual.

Physicians and Surgeons Located at New Ulm

Dr. C. H. Blecker advertised in the New Ulm *Pioneer* as Deutscher Arzt from June 1, 1858, to February 24, 1859. The *Pioneer* also contained the cards of Jacob Fleck and wife in 1858. Dr. Fleck was a barber who did bloodletting, extracted teeth, et cetera.

Dr. J. B. Calkins came in 1852 and remained about two years. He held a claim of land at Leavenworth.

Dr. John Kaula, a Hungarian, a graduate of the University of Budapest (about 1840), came to the United States as a political exile. He was a follower of Louis Kossuth, the Republican leader of the Revolution in Hungary in 1848. Dr. Kaula came to the United States in 1849 and practiced in Chicago until the founding of the New Ulm settlement. He was a good botanist and prepared roots and herbs whenever needed in the form of concoctions. He used quinine, mercury and salts liberally. He underwent all the exposures incident to pioneer life. It is said that he walked five miles in the snow to attend a case in confinement. He retired in his later years but remained in New Ulm until his death which occurred in his eighty-fifth year in 1892.

Dr. Carl Weschcke advertised as Praktiker Arzt and Wund Arzt as early as June, 1860. He was born in Saxony in 1831. He was educated in that country, passed through the Military Surgery Department of the University of Berlin, then through the University of Griefswald, graduating in 1856. He then attended Halle University where he served in the army one year, according to law.

He came to New Ulm in the year 1860 and he and Dr. Kaula were the only resident physicians during the Indian Massacre in 1862. Dr. Weschcke was employed as Military Surgeon for soldiers. In 1868 he went to California,

where he remained several months. He became sick, however, and returned to New Ulm. Dr. Weschcke was the first pharmacist in Brown County and in 1866 established the first drug store in New Ulm, known as the Pioneer Drug Store, now the Epple Drug Store. Dr. Weschcke was civic minded. In 1870 he was elected to the New Ulm City Council and subsequently was appointed to the office of mayor in 1877. He served in that capacity for fifteen years. He died at New Ulm in the year 1906.

Dr. Winkelmann advertised as Arzt, Wund Arzt, and Geburtshilfer Zahn Arzt, from March, 1858, to April 14, 1859.

Dr. Truman R. Humphrey was a native of Vermont. He received his medical education in Boston and was one of the early white settlers in western Brown County. His first practice was in Stoughton, Massachusetts. Thereafter he practiced in Thornton, New Hampshire, until 1859 when he moved to Hokah, Minnesota, where he took a homestead. In 1864 he took a claim three miles southeast of Sleepy Eye in Albin township, and remained on the farm for forty years. He practiced medicine in that community over a period of twenty-five years. He was coroner for Brown County from 1887 to 1892. After retiring from the farm he moved to Sleepy Eye, where he died in 1911.

For many years Dr. Humphrey was one of the most influential residents of western Brown County. He and his wife took an active part in the development of the social and economic conditions in that part of the county.

Dr. August Westphal advertised as Zahn and Augen Arzt from February, 1860, to March, 1861. He opened the first school on December 17, 1857, and was its teacher. After the Indian War in 1862 Dr. Weschcke and Dr. Kaula had the field to themselves until about the year 1867.

Dr. Alfred Mueller was born in Berne, Switzerland, in 1835. There he obtained his literary and medical education, graduating in medicine in 1852. In December of that year he came to the United States, locating in New York City for a brief period. In 1856 he came to Minnesota, locating at Stillwater until 1861 when he was appointed Surgeon-in-Charge of Fort Ridgely where he remained until 1867. He was the only surgeon in charge during the battle with the Sioux.

After the military post was abandoned he moved to New Ulm where he followed the practice of his profession until 1889, retiring to his native Switzerland to pass his declining years. He died in 1899.

Dr. Mueller married Eliza Eichelberger who died in 1876. At the trying hours during the Indian outbreak at the fort she did not spare herself in nursing the sick and wounded men. Due to exposure and laborious efforts in ameliorating the sufferings of the sick, her health became undermined and this, it was believed, hastened her death. She was the Florence Nightingale of Fort Ridgely.

A monument has been erected by the state at Old Fort Ridgely to commemorate her labors in behalf of the afflicted during the siege of the Fort The monument has the following inscription:

> "Mrs. Eliza Mueller, wife of Dr. Alfred Mueller, born in Berne, Switzerland, April 21, 1831; died September 26, 1876. Thy Mission on Earth was unbounded Charity; Thy Reward is Eternal Peace."
>
> "Her valor and devotion to the care of the sick and wounded soldiers and refugees during and after the Sioux Indian Outbreak of 1862 will forever be cherished in the hearts of a grateful people."

Dr. Mueller was one of the outstanding physicians of this part of the country. While a student in Berne, Switzerland, he was an instructor in anatomy. When Dr. Fritsche visited him in Berne in 1889 Dr. Mueller took him to the Medical Museum to show him an anatomic specimen which he had prepared thirty-seven years before; it was still in good condition. Dr. Mueller was considered one of the best surgeons in this region. He served as chairman of the town board of New Ulm in the early days and was a member of the pension board. He was a member of the Blue Earth County and Minnesota Valley Medical Societies as well as the Minnesota State Medical Association.

F. Zur Netten, a German physician, practiced in New Ulm in the late fall of 1883.

Dr. G. A. Sellmer located in Lake Hanska and Linden township in 1873. He practiced there until 1890 when he decided to go back to Norway.

Dr. J. L. Wellner practiced in Brown County in the early eighties. He served as county physician for a time.

Dr. Marcel Zenopalsky advertised as Amerikaner-Deutscher Arzt and Wund Arzt from June 2, 1860, to June, 1861. His advertisement in a New Ulm paper stated he could prevent and cure scarlet fever for 25 cents. He later moved to Blue Earth County.

A **Dr. Wilson** located at New Ulm in 1870, remaining until November 3 of the following year. He died in 1872 and is buried in the town of Leavenworth, Brown County. He was addicted to drink and when imbibing entertained his company by singing such songs as "Coming Thru the Rye."

A **Dr. M. W. Scott** came from Morristown, Minnesota, in 1870, or thereabouts, and located in New Ulm. After a year he moved to the Dakotas. His fees were 25 cents in town; 50 cents in the country.

Dr. A. F. George, evidently a college graduate, started practicing in New Ulm in July, 1870, and remained for a brief period.

Drs. Weems and Menning opened offices in New Ulm in May, 1872. The partnership was dissolved the following September and Dr. Louis Menning continued the practice until March, 1873. He later located in Ohio.

Dr. J. W. B. Wellcome located in New Ulm in 1871 and remained until 1874; he returned for a few months in 1879. Dr. Wellcome was born in New Portland, Maine, in 1828. At the age of sixteen he entered Burnhame High School where he remained three years. He then studied medicine, received his diploma and, in 1856, went to Wisconsin where he practiced until 1858. The following year he located at Garden City, Minnesota. In 1883 he received a diploma from St. Louis College of Physicians and Surgeons. In 1862 he was appointed examining surgeon for the drafted men in the Civil War, with offices at Mankato. In 1863 he was first surgeon, substituting for Dr. W. W. Clark, who was ill. In 1872 he was appointed surgeon for pensions, holding the position for four years.

Dr. Wellcome assisted in forming the first medical society in the Minnesota Valley. He was at Garden City during the Sioux uprising in 1862. From Garden City he moved to New Ulm in 1871 and in 1874 located at Sleepy Eye where he continued the practice of medicine until the time of his death in 1906. He was an Active Free Mason, was civic minded and took an active interest in advancing the civic affairs of Sleepy Eye and adjacent community.

Dr. Wellcome, as was customary in those early days, acted as preceptor for several young men, namely—Dr. J. W. Andrews of Mankato, Dr. J. T. Burnside of Duluth, and his son, Jacob Burnside, Jr. Dr. Wellcome died of carcinoma of the neck.

Dr. B. Hofstetter located in New Ulm from October 20, 1871, until May, 1873.

Dr. Charles Berry, one of the leading practitioners of this community, arrived in New Ulm in March, 1873. Dr. Berry was born in Coleville, New York, in 1837. He studied medicine in Concord, New Hampshire, and in 1859 graduated at the University of Michigan; he also graduated from the University of Buffalo, New York, in 1870. Dr. Berry enlisted as an assistant surgeon in the 106th New York regiment and served until the Civil War closed. On account of impaired health he came to Minnesota in 1866, locating at Belle Plaine. In 1872 he commenced the practice of medicine at New Ulm, continuing until the time of his death, July 18, 1890.

Dr. William Wakefield, graduate of University of Michigan Medical College in 1882, located at New Ulm for several years, then moved to Lake Benton, Minnesota, where he continued practicing medicine for many years until his death.

Dr. Eli Kuhlmann located at New Ulm in the latter part of 1879 and remained there until October, 1881. He was a physician and chemist and ran a drug store. He gave special attention to chronic diseases. A year later he moved to Indiana, where he died.

Another physician who came to New Ulm in 1879 was **Dr. B. Carl,** whose real name apparently was **Carl von Neufert.** Dr. von Neufert was born in Bavaria in 1839. He attended the University of Wurzburg in 1865 and served as surgeon in the army in his native country. He practiced in Bavaria for ten years before coming to the United States. He practiced at New Ulm until November, 1884, when he moved to Colby, Wisconsin; later to Stevens Point, Wisconsin. His son, Carl von Neufert, F. A. C. S., became an eminent surgeon at Stevens Point, Wisconsin, where he began practicing in 1892. He has been made an honorary member of the State Medical Society of Wisconsin.

Dr. B. M. Randall, son of the well-known Fort Ridgely settler, Major B. H. Randall, located at New Ulm in December, 1884. He remained there until January, 1887, when he removed to Graceville, Minnesota, where he practiced many years. He was a graduate of Rush Medical College, Chicago, in 1883.

(To be continued in April issue.)

President's Letter

THE PATIENT-PHYSICIAN RELATIONSHIP

HISTORIANS tell us that history repeats itself, that discoveries of archeologists show as fine and as high a type of civilization in the dim past as we have now. Economists speak of the worries and the concerns of past ages, the modes of living under the then existing economic conditions, of dollar values, of periods of depression and times of plenty with waves of prosperity.

Today we find that the nature of people has not changed to any great extent; that the psychology of life has remained about the same; that thoughts which we might attribute to one century and people carry over into the next century; that the brotherhood of man in this so-called changing world still hinges around the Golden Rule.

The physician, since the time of Hippocrates, has believed in free enterprise in the practice of medicine. The physician-patient relationship is founded on faith and honesty, a sacred trust which has survived the vicissitudes of time. The men of our Association, more and more, are coming to believe in this relationship.

If we are to live in a democracy, true democratic principles in word and deed must prevail. There can be no half-way between state medicine and our present type of practice. The public has been and will be better served under our present method. We are banded together in a mutual help organization, not a trust or corporation for profit, with a firm and steadfast purpose of increasing the joy of living by aiding the people of our nation to better health.

We are coöperating with the government in national defense, giving of our time and knowledge without even ordinary compensation for our time. Many of our members are leaving their homes and practices at great sacrifice to enter military service. Can we be called selfish in our desire to protect a principle most dear to us?

We know that in private practice, faith plays a great part in cure when it overcomes fear. This faith causes the patient to follow his physician's bidding, and can only be found where the present type of practice prevails.

Civil governments and industrial compensation boards recognize this when they grant to an employe the right to choose his own physician and surgeon. When dictators and dictatorial powers prevail in our state and nation, democracy will fall and our people will become serfs and slaves to their will; then professional men will become puppets to their wishes.

We say it cannot happen here. Why do we believe this? Are we so sure of our strength? Unless we assert ourselves by giving to our clientele the best of medical accomplishment, both preventive and curative, and hold firmly to a feeling of friendship, collaboration and fair dealing with each other, we may find ourselves beset by the danger of having our liberties taken away from us and our opportunities dissipated by circumstances without our control.

It is well that we hold fast to that which has been tried and not found wanting, both in government and medicine.

B. J. BRANTON, M.D., *President*
Minnesota State Medical Association

EDITORIAL

MINNESOTA MEDICINE

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BUSINESS MANAGER
J. R. BRUCE

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TRENDS OF DISEASE

MUCH of the present-day news is so depressing that we are inclined to grasp at reports that show favorable trends. And although statistics must be taken with caution, when properly compiled and interpreted they do indicate trends. The statistics put out by the Metropolitan Life Insurance Company meet these requirements and each year the mortality rates of this company duplicate those of the country at large.

During the past thirty years the mortality rate has fallen 40 per cent. This progress is accounted for largely by the cutting down of deaths in infancy, childhood and young adulthood. The decline in mortality rate, however, has been present in all age groups.

The average length of life of all policy holders in this insurance company is sixty-three years, which constitutes a gain of sixteen years in the past thirty years.

One of the most outstanding reductions in death rates has been that in pneumonia. In 1940, this rate was 35.5 per 100,000; in 1939, 42.8; in 1938, 50.6; and in 1937, 66.9. In the past four years the mortality has been cut in half. Serums and drugs are entitled to the credit for this progress.

In the case of tuberculosis the mortality last year was 44.3 per 100,000 compared with 80.9 ten years ago, and 224.6 thirty years ago.

The childhood diseases continued in 1940 to be less of a menace than the year before. The mortality of scarlet fever, measles, diphtheria and whooping cough combined was 2.9 for 100,000, less than that for measles alone ten years ago.

It is pleasing to note, too, that last year there was a decline in the mortality due to appendicitis and puerperal fever.

On the other side of the picture the mortality due to chronic diseases characteristic of middle and later life, namely diabetes, cancer and vascular diseases, has increased. This is to be expected as the proportion of the population in the older decades is increasing.

Doubtless numerous factors account for the improvement in the health of our citizens. Publicity campaigns which call the attention of public and profession alike to the need for taking remedial action play their part. The remedial steps taken in response to publicity campaigns are fully as important. Improvement in public sanitation and control of contagion is without doubt more important in the betterment of public health than all other factors combined.

DR. IKEDA VINDICATED

IN OUR ISSUE for October, 1940, appeared an editorial on the subject of "State Licensure of Laboratory Technicians" by Dr. Kano Ikeda, pa-

thologist at the Miller Hospital in Saint Paul. The editorial, in brief, advocated the continuance of the Registry of Medical Technologists of the American Society of Clinical Pathologists, which has been in operation since 1928 and in which some 6,000 medical technicians have voluntarily met the requirements and registered. He could see no reason for changing to state licensing with forty-eight different standards subject to political influence and control. Reference was also made to the organization known as the American Medical Technologists, composed of technicians not registered with the Society of Clinical Pathologists, which for a fee of five dollars issues a certificate M. T. so like the one issued by the Registry as to be confusing to the uninitiated.

The editorial aroused a spirited response from Dr. R. B. H. Gradwohl of the Gradwohl Laboratories, Saint Louis, in the form of a communication submitted for publication in the journal. Not wishing to present a battlefield for a controversy over the question whether medical technicians and the public weal would be better served by registration in individual states than by continuing the present national Registry of the Society of Clinical Pathologists, we declined space to Dr. Gradwohl's communication. The communication, we are informed, appeared in *The Gradwohl Laboratory Digest* with additional material consisting of a letter to Dr. A. D. Cutter, Secretary to the Council in Medical Education and Hospitals of the A.M.A., making inquiry regarding the authorship of a statement attributed by Dr. Ikeda to Dr. Cutter, and also Dr. Cutter's reply denying his having made such a statement. Copies of this *Laboratory Digest*, according to report, have been widely circulated in Minnesota and perhaps elsewhere in an obvious attempt to discredit Dr. Ikeda and, therefore, his point of view in the eyes of the profession.

When Dr. Ikeda called Dr. Cutter's attention to the latter's statement which appeared in one of his letters to the effect that "the Council was in no position to feel that a state board of examiners in medical technology would represent any advance over present methods of control in this field," Dr. Cutter corrected himself both to Dr. Ikeda and Dr. Gradwohl.

Dr. Ikeda is well known in the Twin Cities where he has acted as pathologist at the Minneapolis General, Saint Luke's and the Miller Hospitals. His activities in trying to raise the standard of training for medical technicians and in combating dishonest advertising on the part of low-grade commercial schools for technicians are nationally known. Any aspersions, therefore, on Dr. Ikeda's honesty and truthfulness are resented and we are glad to give space to explain the facts which led to Dr. Gradwohl's accusations. An admission by Dr. Gradwohl in his *Laboratory Digest* of the error in his judgment of Dr. Ikeda, which opinion has been broadcast in this same *Laboratory Digest*, would serve to undo, in part, the injustice he has done to Dr. Ikeda, and would close this chapter of a controversy which doubtless has two sides and upon which other chapters will doubtless be written in the future.

PREMARITAL EXAMINATIONS

SOUTH DAKOTA, Illinois and Wisconsin now have laws on their statute books which require that those who contemplate matrimony exhibit to the County Clerk of Courts certificates showing that they have recently submitted to tests for syphilis and that the reports show negative reactions. Until this is done, no marriage license can be issued.

As long as States adjacent to those mentioned above have no legislation covering these matters it is easy for those so desiring to evade the provisions of these laws. People living in Sioux Falls, South Dakota, for example, can, and frequently do, go to Luverne, Minnesota, or Rock Rapids, Iowa, a distance of thirty-five miles in either instance and get married without having to pay any attention to the South Dakota law. A recent Associated Press dispatch carrying the date line of Des Moines, January 11, stated that at least 22,000 surplus couples exchanged vows in 1940 in Iowa. A bill to remedy this situation is being introduced in the present Iowa legislature. Such a measure passed the house last session but died in a senate committee.

"This increased marriage business is not very healthful," Dr. Walter L. Bierring, Iowa Health Commissioner and former President of the American Medical Association is quoted in the same despatch as saying. "It dramatizes the need for such legislation in this state."

GILBERT COTTAM

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

PREPAYMENT PLANS FOR MEDICAL SERVICE

Voluntary group medical care is probably the most generally discussed of all civilian projects before the medical profession today.

Many voluntary plans have been started in many parts of the United States, some under private sponsorship and some under the ægis of state and county medical societies. So far none of those which are under medical society management have been in existence long enough to provide much material for judgment as to their worth.

Enabling acts have been obtained in most cases but the acts are so drawn that groups of persons outside of organized medicine may, in nearly all cases, take advantage of them and set up competing group medical plans. Also separate units of medical association members may operate independently under the act. Such, at least, has been the experience to date.

A number of prepayment plans of the contract type have been in existence in various parts of the country for a considerable length of time. Increasingly corporations have been employing part or full-time medical men in behalf of their employes and insurance companies are developing plans for hospital, surgical and medical benefits. More and more attention is being given by state medical associations and their component units to the whole question of prepayment plans for medical service.

For Government Support

Also there is still pressure for government supported compulsory sickness insurance and quite recently even Thomas E. Dewey of New York, defeated candidate for the Republican nomination, with an eye, no doubt, to 1944, quite definitely ranged himself in favor of new plans for medical care for the American people. Whether the arrangement should be compulsory and tax supported he did not say, though he took care to stipulate that medical men should be in control of the service and the patient should have his choice of physician.

Thus top flight politicians are seeing the value of medical care as campaign material and the subject is obviously a live one within and without the ranks of medicine today.

Conference Reports

There is clearly a great need to accumulate and report upon experiences, to date, of all who are now experimenting in prepayment plans for medical service.

This need was recognized at the Chicago National Conference on Medical Services (successor to the Northwest Regional Conference which formerly held its sessions in Saint Paul) with a group of reports under the following titles and speakers—"The Second Year," by Mr. J. D. Laux, executive director of Michigan Medical Service; "Why Are We Waiting," by W. D. Hartman, Macomb, Ill., and "What We Learned From Wisconsin Experiments," by Mr. J. G. Crownhart of Madison, secretary of the Wisconsin State Medical Society.

The second year of the Michigan experiment still finds the project "in the red," according to Mr. Laux. The plan is not yet reaching low income groups and probably will not unless they can be solicited through the large industries. The fact that the Ford Company will remove its entire group from Michigan Medical Service to an insurance company plan, March 1, may mean a setback.

As noted in the February issue, the Wisconsin experiments have been abandoned, and, though figures and facts were not conclusive, it was quite obvious that no ready made public demand existed for such prepayment services.

Trouble in New York

Medical Expense Insurance has been considered carefully in New York and a plan has been worked out under the name of "Medical Expense Fund of New York," which is now in the process of organization under sponsorship of the state and county medical societies concerned. To facilitate the project, enabling legislation was sought and obtained from the state legislature; but, as noted above, the legislation was not limited to projects organized and sponsored by organized medical groups. The result has been, according to the *Westchester Medical Bulletin,* that no less than six prepayment plans are now operating or are in process of organization under the Act. Among them are the Group Health Coöperative, Inc., the American Plan for Medical and Surgical Care, Inc., the Medical Guild Foundation, Inc., the Association for Prepaid Medical Care, Inc., and Associated Health Foundation, Inc., besides the Medical Expense Fund. As a result, it is not unlikely that the whole program will be weakened and discredited before the public. The law, in this case, does not limit or specify the number or kinds of corporations which may attempt to qualify under it except that such a corporation must operate on a nonprofit basis. To date, protests to the State Department of Insurance have been unavailing.

New Jersey's Act

In New Jersey, on the other hand, medical society sponsored insurance is only just being organized; but an enabling act which permits only the state medical association to conduct such insurance has been obtained. The Ohio State Medical Association is hoping to get a similar bill through the Ohio legislature this year. The California State Medical Association is embarked on a big scale plan for voluntary health insurance at low premium; but the efforts of the state medical association to meet the demand by this means may be thwarted before it has had a chance to prove itself by the public demand for compulsory state supported sickness insurance made recently by the governor.

In Illinois

Dr. Hardin of Illinois told the Chicago meeting that in view of these and many other experiences, Illinois would wait for better figures and more complete results. In Illinois there appears to be no great public demand for prepayment plans, and the difficulties of selling such insurance to the people who need it most are clearly enormous.

At the Forefront

It was gratifying to Minnesota delegates to the Conference to find that in two exceedingly important departments, Minnesota seems to be at the forefront among the states.

The Minnesota plan for medical care of all social security and welfare clients was much further developed than in the other states represented, though extension of the plan to the big cities still lags. Mr. Walter Finke, director of the Division of Social Welfare, Dr. H. E. Hilleboe, Chief of Medical Services, and Dr. A. W. Adson, Chairman of the State Medical Advisory Committee, outlined the county function of county medical advisory committees here, and of the state advisory committee which operates as part of the division. Rural services in other states appear to be chaotic by comparison; but in some of the cities, notably Chicago, relief patients are permitted to choose their own physicians, just as they are in rural districts here, and the city welfare board pays the fee.

Center Courses Outlined

With the extraordinary development of medical programs at the University Center for Continuation Study, sponsored and assisted by the Minnesota State Medical Association, as outlined at the Conference by Director W. A. O'Brien, postgraduate medical education in the state has moved far ahead. Center courses afford intensive training for practicing physicians under ideal conditions and they are supplemented to a growing extent by the continuous service provided in the "subject-of-the-month" packets, sent free upon request to any member from association headquarters.

MINNESOTA LEGISLATURE IN SESSION

The 1941 session of the Minnesota Legislature convened on January 7, and is now in full swing. Approximately 1,200 bills have been introduced so far in the Senate and House. The Committee on Public Policy of the Minnesota State Medical Association has reviewed a large number of these bills, some of which directly concern the practice of medicine.

A bill regulating non-profit hospital service plan corporations passed the House of Representatives by a vote of 103 to 6. It has been unanimously recommended for passage by the Senate Public Health Committee, and will soon be up for a final vote on the floor of the Senate. This bill was very carefully considered by the Council of the Minnesota State Medical Association, and should prove very acceptable to the medical profession. Prepaid hospitalization as developed by the Minnesota Hospital Service Association, was started in Saint Paul in 1933, and has grown until today 380,000 persons throughout Minnesota are covered by group hospitalization in this plan.

A bill has been introduced in both the Senate and House to restrict the sale of paregoric to sales made upon the prescription of physician and surgeon. Under existing law, a druggist may sell 2 ounces of paregoric in forty-eight hours to a person without a medical prescription. This loop-hole has made it possible for addicts to go from one drug store to another and purchase unlimited amounts of the drug. This legislation was requested by the Federal Bureau of Narcotics because of the large increase in the sale of paregoric to drug addicts who find it increasingly difficult to obtain morphine and other derivatives of opium.

A bill has been introduced in the House to permit fraternal organizations to furnish medical services to their members and to permit such organizations to enter into contracts with physicians to furnish such medical care. According to legal advice, fraternal organizations cannot, under present laws, designate a physician to furnish medical care to their members. The proposed bill would undoubtedly tend to destroy free choice of physician.

A bill has also been introduced in the Senate and House requiring every motor vehicle using the public highways to be covered by liability insurance in a minimum amount of $1,000 for one injured person, or $2,000 for each accident. Such a law would greatly facilitate the payment of many hospital and medical bills that now go unpaid following accidents. The information available indicates that approximately four out of five motor vehicles do not carry liability insurance.

A bill has been introduced to appropriate money to assist counties employing a public health nurse. A bill has also been introduced to appropriate money for so-called after-care for persons afflicted with Tuberculosis. Both of these bills must first be approved by the Senate Finance Committee and the House Appropriations Committee.

There will undoubtedly be other bills introduced which concern the practice of medicine and they will be carefully scrutinized by your Committee on Public Policy.

COMMITTEE ON PUBLIC POLICY,
By: L. L. SOGGE, M.D., *Chairman.*

IN THE WASHINGTON HOPPER

To any one, who innocently fancied that military preparedness would occupy the 77th Congress to the exclusion of any but the most pressing civil and domestic measures, the list of new bills looking to the improvement of the national health already introduced will be illuminating.

There are, for instance, three bills introduced by Senator Murray of Montana; the first, to provide federal appropriations for compensation for disability or death of workers from silicosis or other dust diseases; the second, to provide sums as high as $37,000,000 in 1946 and not to exceed $17,500,000 in subsequent years for prevention, treatment and control of tuberculosis to be administered and state plans to be approved by the United States Public Health Service; third, to appropriate up to $3,000,000 in 1943, to be given to the Secretary of Labor to provide more adequate protection to workers and their families from losses caused by disability or death from occupational diseases and to promote prevention and control of industrial conditions hazardous to health. State Plans to obtain aid under this appropriation would have to provide for administration by state labor departments or other agencies charged with administration of labor laws, not by state departments of health.

Tuberculosis, Cancer, Hospitals

Representative Elliott of California has introduced a bill for prevention and control of tuberculosis among migrant workers with an appropriation of $1,000,000 the first year, to be administered by the United States Public Health Service; and Representative Rogers of Massa-

chusetts has introduced a bill to provide $2,300,000 the first year for fostering research relating to cancer and for aid to establish a National Cancer Institute, all under direction of the United States Public Health Service. Besides aid to research projects this bill provides for aid to states, counties, cities or other political subdivisions for improvement and extension of facilities for diagnosis and treatment of persons suffering from cancer or suspected of having cancer, provided that "appropriate professional groups" coöperate with the plans and that preference, so far as treatment is concerned, is given to needy persons.

Representative Fulmer of South Carolina has introduced a bill for construction of hospitals which is identical with the Wagner-George bill for hospital construction introduced in the 76th Congress and passed by the Senate at that session. It was referred to the House Committee on Interstate and Foreign Commerce and died there when the Congress expired.

For Chiropractors

A new attempt to give chiropractors the right to treat injured federal employes entitled to benefits under the United State Employes Compensation Act, has been made in a bill introduced by Representative Toal of California; and Senator Capper of Kansas has once more introduced his bill for establishment and administration of state health insurance plans. This is the perennial sickness insurance bill sponsored by the American Association for Social Security which proposes an appropriation of no less than $50,000,000 for the year 1941 and, thereafter, whatever annual amount may be necessary for its ambitious program. Incidentally, the bill stipulates that *ALL* schools of practice duly licensed within the state shall have the right to furnish the medical benefits under the act.

For Needy, Blind, Cripples, Veterans

Two bills to provide medical and surgical aid to needy blind and to provide for education of all types of physically handicapped children were introduced, respectively, by Representative Patrick of Alabama and Representative Angell of Oregon, the one to be administered by the Social Security Board, the other by the United States Commissioner of Education and state departments of education. Appropriations for care for the blind would be $1,000,000 for the first year; for the handicapped they would be up to $11,580,000.

Representatives from five states have introduced bills for construction of new veterans' hospitals and for enlargement of existing facilities to the tune of 3,350 new beds at a cost of more than $9,000,000.

Reintroduced

H. R. 10,606, the bill to promote national preparedness through physical education, including athletics instruction and guidance in healthful living, died with the 76th Congress but has been reintroduced as H. R. 1074 by Representative Schwert of New York with specific reference to health education eliminated. This bill is sponsored by the American Association for Health, Physical Education and Recreation and proposes a federal appropriation totalling eventually no less that $200,000,000 a year! It carries a most unusual provision to the effect that the scope of activities to be carried on under it may be extended in any state apparently without any limit whatever if the legislature of that state decrees. The administration would apparently remain in the hands of the Department of Education.

To Exempt Students—Purify Streams

A bill to create a division of water pollution control in the United States Public Health Service has been introduced by Representative Spence of Kentucky. Annual appropriations not to exceed $50,000,000 will be made available, if the bill is passed, to prepare comprehensive plans for reducing pollution and improving sanitary conditions of all the navigable waters and streams tributary thereto of the United States; also for grants-in-aid to state or municipalities for construction of necessary treatment works.

Senator Murray also introduced a bill to commission any qualified physician or dentist selected for training under the Selective Service Act in the Medical Reserve Corps and then call him to active service according to the law; also to exempt all medical and dental students from training and service and to exempt such students who are members of reserve components of the land or naval forces, from active service without their consent except in time of war. This bill is identical with one introduced by Senator Murray in the last Congress.

For a Secretary of Health

A bill to establish a Department of Health at the head of which is to be a Secretary of Health, long advocated by the American Medical Association, has been introduced by Representative Pfeifer of New York. The secretary, according to this bill, must be a "member of the medical profession." If the bill is enacted, the Food and Drug Administration, the Bureau of Census, the Division of Vital Statistics, the Freedmen's Hospital and St. Elizabeth's Hospital, the Children's Bureau, all functions of the United States Public Health Service, the Bureau of Narcotics and the Health Department of the District of Columbia would be transferred to this department; also the whole or any part of any bureau, service or other agency of government primarily engaged in fostering or promoting health and sanitation.

In the Offing

That the ensuing weeks will see many more bills relating to health and medicine is a foregone conclusion.

It is certain, for instance, that Senator Wagner will shortly introduce a new bill to make effective a national health program on the scale of the bill he sponsored in the 76th Congress.

This bill, it will be remembered, provided for hospital construction, for compensation for disability wage losses, for expansion of maternal, infant, child health and welfare service, for general public helath services and general medical care. It may well gain impetus, rather than lose it, by direct link with the national defense program.

Announcement has been made, too, of a forthcoming bill to finance health care for every worker in defense industries. It is estimated that the plan would embrace at the start about 10,000,000 persons and the number of beneficiaries will obviously grow to staggering proportions if a truly "all-out" defense program gets under way. It has been suggested by sponsors, that, while the government would pay the bills, the medical care would "probably be rendered by private practitioners so as to avoid any controversy over 'socialized medicine.'"

As this issue goes to press, it is announced that the President will be ready shortly to propose a complete internal defense program for the United States. That program will undoubtedly cover the health of the people as an important adjunct to defense. It is likely to include new recommendations for medical services but physicians have the President's word for it, given in a preëlection speech, that such recommendations will not destroy the independence of the medical profession nor the quality of service they offer to the American people.

"SCHEMING ENTERPRISE"

From the *Washington Post*, February 7, 1941, by Gerald G. Gross, staff correspondent:

Coolly discussing Group Health Association and flinging the remains at prosecution counsel, William E. Leahy yesterday depicted the Federal employes' medical coöperative as a scheming, commercial enterprise which aimed to destroy organized medicine.

The Washington attorney's day in court was one such as law students dream of and their professors set up as models. For two and three-quarter hours, interrupted only by a five-minute recess, Leahy stood before the jury and worked on GHA.

The 20 doctors whom he is defending against the Government's charges of monopolistic practices might have called Leahy's opening statement to the jury an exploratory operation, a self-explaining type of surgery.

His scalpel a strong, unhesitating voice that never faltered during the lengthy speech, Leahy's incisive thrusts laid bare—according to his interpretation to the jury—a corporate body conceived with questionable motives, organized by "haughty and arrogant" men and dedicated to destruction of the hallowed traditions of the medical profession . . .

Speaking extemporaneously and without a note, eschewing a speaker's stand on which he might have leaned to rest his short, stocky frame, the defense lawyer systematically exposed, piece by piece, the alleged frailties of GHA which constitute the framework of the doctors' case of having been impelled in the public interest to challenge the coöperative.

He described Group Health Association, which was launched here in 1937 to furnish medical care on a prepayment basis, as "one of the most carefully conceived schemes ever put in operation," whose objective was to foist a socio-economic experiment upon the District . . .

He described Dr. Raymond E. Selders, a former medical director of GHA, as a doctor to whom local hospitals denied operating privileges because "the ink wasn't dry on his license to practice surgery when he applied" . . .

Leahy charged that GHA today offers little to subscribers and that it is doing 'practically nothing' for HOLC employes, for whom it was originally intended.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Julian F. DuBois, M.D., Secretary

Minneapolis Physician Pleads Guilty to Criminal Abortion

Re: State of Minnesota vs. Samuel R. Fraker.

On February 21, 1941, Dr. Samuel R. Fraker, 70 years of age, entered a plea of guilty in the District Court of Hennepin County, to an information charging him with the crime of abortion. Following a statement of the facts to the Court by Mr. Brist on behalf of the Minnesota State Board of Medical Examiners. Dr. Fraker was sentenced to a term of not to exceed 4 years in the State Prison at Stillwater, which sentence was suspended upon Dr. Fraker's plea that he was suffering from pernicious anemia, and that he desired an opportunity to live with his daughter in Los Angeles, California. Dr. Fraker's plea was granted by Judge Arthur W. Selover, and the sentence was suspended for a period of 3 years.

Dr. Fraker was arrested on February 11, 1941, following a joint investigation by the Minnesota State Board of Medical Examiners and the Women's Bureau of the Minneapolis Police Department, of the facts concerning the abortion of a 17-year-old Minneapolis girl. At the time of his arrest, Dr. Fraker was maintaining an office at 315-316 Masonic Temple Building, Minneapolis, notwithstanding the fact that on November 4, 1938, his license to practice medicine was suspended for a period of 3 years for immoral, dishonorable and unprofessional conduct growing out of a previous criminal abortion. After Dr. Fraker had been sentenced by Judge Selover he was served with a citation requiring him to show cause why his license as a physician and surgeon should not be permanently revoked. Dr. Fraker was paid $50.00 for his services in performing the criminal abortion.

The Minnesota State Board of Medical Examiners fully approves of the disposition of the case as made by Judge Selover. Dr. Fraker's record discloses that it is futile to keep him out of the abortion racket as long as he remains in Minneapolis. Only two alternatives were available, one, to ask the Court to place Dr. Fraker in prison, and the other to accede to his request for a chance to live with his daughter, particularly in view of the condition of his health and age.

Unlicensed Healer Sentenced to Two to Twenty Years for Grand Larceny

Re: State of Minnesota vs. Mels White, alias Jackson Barnett, alias J. M. W. Barnett, alias Marion Royke, alias Marion Roller, alias Mariano Reyes.

The Minnesota State Board of Medical Examiners is pleased to be able to announce to the medical profession that following some splendid work by L. L. Roerkohl, County Attorney of Houston County, Minnesota, and Sheriff George V. Kelly of the same County, the above named defendant was sentenced on November 19, 1940, by Judge Vernon Gates of Rochester, Minnesota, to a term of 2 to 20 years in the Minnesota State Prison following White's conviction of the crime of grand larceny in the first degree.

County Attorney Roerkohl and Sheriff Kelly discovered that White had obtained $1,400.00 from a resident of Houston County by fraudulently mis-representing that White owned valuable oil lands in Oklahoma and that he needed money to finish drilling for oil. White also fraudulently misrepresented himself as an heir of the late Jackson Barnett, millionaire Oklahoma Indian. Notwithstanding the fact that the crime was committed in May 1939, and was not reported to the County Attorney or the Sheriff of Houston County, until the summer of 1940, Mr. Roerkohl and Mr. Kelly diligently pursued the matter, with the result that White was arrested and convicted by a jury of the crime of grand larceny. Due to the fact that White had been previously convicted of a felony, his sentence was doubled, which should eliminate him from the field of illegal medical practitioners for some time.

According to the records of the Medical Board, White came to Minnesota in the fall of 1934, and located at Winona. Following an investigation made by the Board, White entered a plea of guilty on May 8, 1935, to a charge of practicing healing without a Basic Science Certificate, and was sentenced to pay a fine of $200.00 or serve 2 months in the Winona County Jail. White served the jail sentence rather than pay the fine. In 1936, White was again arrested for practicing healing without a Basic Science Certificate and on October 8, 1936, entered a plea of guilty in the District Court at Rochester, Minnesota, where he was sentenced to a term of one year in the Olmsted County Jail. White's previous record shows that in 1917, he was convicted of carrying concealed weapons in the State of Indiana, and sentenced to serve 110 days at the Indiana State Farm at Green Castle, Indiana. Under the name of Marion Roller, White was convicted at Hudson, Wisconsin, in April 1926, of carnal knowledge, for which he served 7 years, 2 months and 6 days in the Wisconsin State Prison. In 1934, he pleaded guilty at Janesville, Wisconsin, to 2 charges of practicing healing without a Basic Science Certificate. While under arrest in the last case in Caledonia, it was learned that White had obtained $60.00 from a resident of Houston County, for herbs. It was also learned that he obtained $24.00 from a young lady in Houston County for herbs, which he did not deliver.

County Attorney Roerkohl and Sheriff Kelly deserve the highest commendation from the medical profession, as well as the general public, for their fine piece of work in putting out of circulation, one of the most persistent quacks ever to operate in this state. White's long criminal record proves that he has absolutely no respect for any of the laws and that he has made his living for a great number of years by imposing upon the public. We believe it is also a tribute to the Courts that Judge Gates imposed the maximum sentence.

HEALTH REPORT ON UNITED STATES TROOPS

The *Monthly Health Review* for troops in the United States, issued by the Surgeon General's Office, Washington, D. C. for the four weeks ended October 26, 1940, shows that the general admission rate for these troops was 740 per thousand as compared to 566 for the previous month, communicable diseases having been largely responsible for the increase. The rate for the respiratory group of diseases rose to 212.2 from 114.1 for September. Venereal diseases showed a slight decline to 39.1 from 44 for the previous month, being still well above the rate for the same period in the previous year. Two cases of typhoid were reported during the month, one in the Seventh Corps Area and one in the Eighth Corps Area; there was one case of typhus fever in the Fourth Corps Area and one of malta fever in the Ninth Corps Area. The rate for injuries showed an increase over that for September, 119 as compared to 87. The noneffective rate remained low, 21.7. The death rate was 2.61 per thousand. Of the seventy-nine deaths, four were due to adenocarcinoma, one to meningitis, three to tuberculosis, one to pneumonia, two to appendicitis, twenty-three to automobile accidents, twelve to airplane accidents, three to motorcycle accidents, six to suicide, three to homicide and two to drowning.

OF GENERAL INTEREST

Dr. and Mrs. Harvey Hatch of Minneapolis are the parents of a son, born February 7.

* * *

Dr. W. W. Moir, Jr., is now in service and is at present stationed at Fort Wayne, Wyoming.

* * *

Dr. S. Marx White of Minneapolis was reëlected president of the Council of Social Agencies for a third term at the twenty-fifth annual election last month.

* * *

Dr. and Mrs. D. Kalinoff and daughter, Helen, are enjoying a vacation in the South, with Biloxi, Mississippi, as their headquarters.

* * *

New president of the Blackduck Golf Club at Blackduck, Minnesota, is Dr. Harry A. Palmer, who was elected at the annual meeting in January.

* * *

A postgraduate course in gastro-enterology was conducted for members of the American College of Physicians at the Mayo Clinic in Rochester, February 10 to 22, under the direction of Dr. Edgar V. Allen.

* * *

Dr. Richard M. Hewitt of Rochester attended a meeting of the Committee on Information, Division of Medical Sciences, National Research Council in Washington, D. C., February 10.

* * *

Fire, starting in an elevator shaft in the basement, recently destroyed Hall's Hospital in Little Falls. There were no patients in the three-story frame structure, which was also the residence of Dr. Elmer E. Hall.

* * *

Dr. William T. Peyton, head of the division of neurosurgery at the University of Minnesota Medical School, will leave about the middle of March on a six-weeks' clinical trip in the East.

* * *

Dr. O. M. Sanderson of Currie took over the office practice of Dr. Walter Henry Valentine of Tracy for two weeks last month, while Dr. Valentine was on vacation.

* * *

Dr. I. H. Kiesling, who has been located in Nashwauk for twenty years, is now a member of the Rood Hospital staff in Coleraine. Dr. Kiesling replaces Dr. J. A. Williams who has located in Hibbing.

* * *

Dr. T. E. Eyres of Pequot is remodeling and enlarging his office-and-residence. His offices will occupy the entire ground floor, while the second floor will be given over to living quarters.

* * *

Dr. C. A. Van Slyke was elected a new member of the board of trustees of the Swift County Hospital Association at the group's annual meeting held in Benson, Minnesota.

Dr. Lawrence F. Richdorf of Minneapolis, who suffered a shoulder fracture, January 12, when he slipped on the ice, is back at his office after spending three weeks in the hospital.

* * *

When the Goodhue and Wabasha County Medical Societies conducted a joint meeting in Red Wing, January 30, Drs. E. N. Cook, E. V. Allen and L. A. Brunsting of Rochester were speakers.

* * *

With the installation of new x-ray equipment, Drs. J. L. McLeod, J. C. Feuling, and J. O. Meyer enlarged their offices in Bovey. The rooms were also redecorated, and made sound-proof.

* * *

Dr. A. R. Ellingson of Detroit Lakes left February 24 for New Orleans, Louisiana, where he is taking a month's course in cystoscopy and x-ray diagnosis at Tulane University Medical School. Mrs. Ellingson accompanied him there.

* * *

Dr. Linus Leitschuh, who has been practicing medicine at Red Lake Falls in partnership with Dr. J. A. Roy, has disposed of his interests to Dr. Frank Petkevitch. Dr. Leitschuh has been called to service in the army.

* * *

Dr. George Friedell, formerly of Russell, Minnesota, has opened offices in Ivanhoe, having purchased the building and equipment of Dr. Alvin Erickson there. Dr. Erickson has been ordered to active service in the United States Army.

* * *

Dr. Stephen Baxter of Minneapolis has been reelected president of the Hennepin County Tuberculosis Association. Dr. W. H. Aurand was elected first vice president, and Dr. Russell Morse was named to the board.

* * *

Dr. and Mrs. E. J. Kepler and Dr. and Mrs. M. N. Walsh of Rochester left February 17 for Montevideo, Uruguay, where Dr. Kepler and Dr. Walsh will attend the second Pan-American Congress of Endocrinology. They made the trip by plane.

* * *

Dr. Janet Sutton, a graduate of the University of Minnesota Medical School, Class of 1940, has become associated with the Itasca Clinic of Grand Rapids-Bovey. She is the first woman physician to locate in Itasca County.

* * *

Two more physicians have been added to the staff of the Hastings State Hospital in Hastings. Dr. R. G. Barnes, an associate of Dr. R. C. Radabaugh in Hastings for the past year, has been named part-time physician on the staff, while Dr. Radabaugh has been named consulting surgeon.

Dr. Carl Eggers, head of the tumor clinic of the Post-Graduate Hospital in New York City, addressed members of the Minneapolis Surgical Society, February 6, at the organization's nineteenth annual foundation dinner held in the Minneapolis club. Dr. James A. Johnson, president of the society, presided.

* * *

Dr. Edgar S. Gordon, associate in medicine and instructor in physiological chemistry at the University of Wisconsin, Madison, was guest member of the faculty for the Continuation Course in Dietetics held February 20, 21 and 22 at the University of Minnesota Center for Continuation Study.

* * *

Two physicians are members of the state legislature. They are Dr. Reuben F. Erickson of Minneapolis, member of the House of Representatives from the Thirty-sixth District, south half; and Dr. Clifford I. Oliver of Graceville, senator from the Forty-eighth District.

* * *

Dr. Isadore Snapper, head of the department of medicine of Peiping Medical College at Peking, China, was a guest of Dr. Irvine McQuarrie of Minneapolis for a few days last month while visiting the University of Minnesota Medical School. Dr. McQuarrie was visiting professor at Peiping Medical College last year.

* * *

Dr. William A. Lange, plastic surgeon in Detroit, Michigan, and a graduate of the University of Minnesota Medical School in 1934, married Mrs. Annie Laurine Dodge in Champaign, Illinois, January 30. His bride is the widow of Daniel Dodge. Dr. Lange is a native of Lake City, Minnesota.

* * *

Dr. Gilbert J. Thomas was elected president of the staff of the Eitel Hospital in Minneapolis at a recent meeting. He succeeds Dr. A. C. Strachauer. Other officers are Dr. A. H. McFarland, assistant chief of staff, succeeding Dr. Walter Ude, and Dr. C. N. Borman, secretary, succeeding Dr. Theodore Stebbins.

* * *

Dr. Henry Silver of Willmar has purchased the practice of Dr. A. H. Borgerson in Sebeka. Dr. Borgerson recently moved to Long Prairie to take over the practice of Dr. M. G. Ericsson, who has moved to Cedar Falls, Iowa. Dr. Silver has been associated with the State Hospital at Willmar.

* * *

Dr. D. W. Pollard, who was recently named permanent superintendent of General Hospital in Minneapolis, has also been named to the position of Minneapolis city physician. In that capacity he will be the examining officer for all city departments and employes whose physical condition may affect their employment.

* * *

Drs. R. H. Creighton and E. C. Andreassen of Minneapolis, who will leave soon for Camp Claiborne, Louisiana, for service with the United States Army, were honored February 20 at a going-away dinner given at the Minneapolis Athletic Club by a group of their associates in the Medical Arts Building.

The Registry of Medical Technologists of the American Society of Clinical Pathologists has moved from Denver, Colorado, to Muncie, Indiana. Since its founding in 1928, Dr. Philip Hillkowitz has been chairman and Mrs. Anna R. Scott, registrar. Dr. Lall G. Montgomery, pathologist of the Ball Memorial Hospital, Muncie, is the newly appointed chairman of the Registry and Miss Carlita R. Swenson, formerly associated with the United States Pharmacopœia of Philadelphia, is the newly appointed registrar with headquarters at Muncie.

* * *

Two Minnesota men are among the ninety-four navy medical officers in the country whose promotions in ranks were approved recently by President Roosevelt. They are Dr. Harry J. Scholtes of Wabasha at Brooklyn, from lieutenant commander to commander; and Dr. Louis H. Roddis of Saint Paul at San Diego, from commander to captain.

* * *

Dr. Walter M. Boothby was in New York City, January 29, to address the ninth annual meeting of the Institute of Aeronautical Sciences on the subject, "High Altitude Flying: Prevention of Anoxemia and Aeroembolism." The article was written in collaboration with Dr. William R. Lovelace. He also attended a seminar on aviation medicine at Yale University in New Haven, Connecticut.

* * *

Dr. Chester A. Stewart of Minneapolis, clinical professor at the University of Minnesota Medical School, has been appointed director of the pediatrics department of the Louisiana State University Medical School in New Orleans. He will go to New Orleans next summer to assume his new post.

Dr. Stewart is a former president of the Hennepin County Medical Society.

* * *

Dr. William R. Lovelace of Rochester addressed a Postgraduate Course in Aviation Medicine at George Washington University School of Medicine in Washington, D. C., early in February. His subjects were: "Physiologic Effects of High Altitude Flying and Rapid Changes in Barometric Pressure," and "Transport of Surgical Patients in Airplane Ambulances; Indications and Hazards."

Dr. Lovelace was honored recently by the Rochester Junior Chamber of Commerce, being given the distinguished service award.

* * *

Alpha Epsilon Iota, honorary and professional sorority for women in medicine at the University of Minnesota, held its annual Founders' Day dinner in the Curtis Hotel in Minneapolis, February 22.

Guest speaker was Dr. Betty Nilsson, a graduate of the University of Illinois and head of the Rajahmundry Hospital in India, who talked on "Women in Medicine in India." Dr. Ruth Boynton was toastmaster.

* * *

Dr. Charles T. Bergen of Blue Earth has taken over the practice of Dr. H. W. Sybilrud of Bricelyn during the latter's service in the United States Navy. Dr.

Sybilrud has reported for duty at San Diego as lieutenant commander of the United States Naval Reserve Corps in the Second Marine Brigade.

A graduate of the University of Minnesota Medical School, Dr. Bergen has practiced at Northwood, Iowa, and at Blue Earth, Minnesota.

* * *

Dr. C. W. Mayo of Rochester was in Wheeling, West Virginia, February 14, to address a meeting of the Ohio County Medical Society on the subject, "Combined Abdominal Perineal Resection." From Wheeling he went to Washington, D. C., to speak at the George Washington University School of Medicine.

He also presented a paper, February 17, at a medical meeting in Newport News, Virginia. His paper was entitled, "Malignancy of the Colon."

* * *

Dr. Emil D. W. Hauser, assistant professor of bone and joint surgery at Northwestern University, addressed the Hennepin County Medical Society, February 3, on "Common Disorders of the Foot Due to Functional Decompensation."

A graduate of the University of Minnesota, Dr. Hauser obtained his Master of Science in orthopedic surgery as a fellow in the Mayo Foundation in 1927, and since that time has lived in Chicago.

* * *

Guest faculty member for the Continuation Course in the Anemias, March 3, 4 and 5, at the University of Minnesota Center for Continuation Study was Dr. William B. Castle, professor of medicine at Harvard Medical School in Boston.

Enrollment was limited to those with special training in internal medicine. The anemias were discussed from the laboratory, experimental and clinical viewpoints.

Dr. Castle also addressed a meeting of the Minnesota Pathological Society, on the University campus, March 4.

* * *

Dr. John P. Hawkinson of Crosby was one of seven fishermen stranded in Minnesota's north woods early last month, when their plane was disabled. The party was rescued by William Leithold, Ely mercy flier, who searched for them by starlight. The party had flown to Lake Gabimichigami, sixty miles east of Ely, to fish. As they prepared to take off on the return trip, one of the plane's skis broke through the ice.

Dr. Hawkinson is mayor of Crosby, and is the newly elected president of the Upper Mississippi Medical Society.

* * *

Medical reserve corps officers who had been ordered to active duty and whose orders have been revoked include:

Dr. George Stanford Atkinson, White Earth, first lieutenant, who had been ordered to Fort Snelling, Minnesota.

Dr. Leo V. James Conlin, Saint Paul, first lieutenant, who had been ordered to Carlisle Barracks, Pennsylvania.

Dr. Kinsey MacLeod Simonton, Rochester, first lieutenant; Dr. Carleton S. Strathern, Saint Peter, first lieutenant; Dr. Alfred Uihlein, Rochester, first lieutenant, and Dr. Louis Dysart Vaugh, Rochester, first lieutenant, all of whom had been ordered to Camp Grant, Illinois.

Dr. C. C. Clay of Minneapolis was in charge of arrangements for a McGill University dinner at the Leamington Hotel, February 13, at which Dr. F. Cyril James, principal of McGill University, Montreal, was guest of honor.

Guests included the following physicians who are graduates of the university: Drs. Peter Ward, A. R. Hall, Alexander Stewart, A. R. Colvin, E. L. Kannary and J. F. Hammond of Saint Paul; Drs. G. L. Evans, Edmund Murphy and George Kennedy of Minneapolis.

Other guests were Drs. John McKelvey, C. W. del Plaine and John Korchik of Minneapolis.

* * *

Dr. Julian F. DuBois of Sauk Center, secretary of the Minnesota Board of Medical Examiners, Saint Paul, and F. Manley Brist, attorney for the Board, presented a paper, "Medical Laws and Their Enforcement," at a meeting of The Federation of State Medical Boards held in Chicago in conjunction with the thirty-seventh Annual Congress on Medical Education and Licensure, February 17 and 18.

Also on the program for the Congress was Col. Leonard G. Rowntree, who was recently appointed Chief of the Medical Division of the Selective Service System, Washington, D. C. Colonel Rowntree was for many years professor of medicine at the University of Minnesota Medical School and chief of the medical division of the Mayo Foundation.

* * *

Speakers at the regional meeting of the Women's Field Army of the American Society for the Control of Cancer, held in Rochester, February 6 and 7, included besides Mayo Clinic staff members:

Dr. A. J. Chesley, secretary of the Minnesota State Board of Health; Dr. William A. O'Brien, president of the Minnesota Society for the Control of Cancer, who gave the principal address at the banquet, "Why Lay Education is Necessary in the Cancer Control Program;" Dr. Gaylord W. Anderson, head of the department of preventive medicine and public health at the University of Minnesota.

Also in attendance were Dr. Max W. Alberts, vice president of the Minnesota society, and Dr. B. J. Branton, president of the Minnesota State Medical Association.

* * *

The value of fraternity life to a medical student was stressed at the forty-third annual Founders' Day dinner, February 18, of Psi chapter, Alpha Kappa Kappa medical fraternity, in the Town and Country Club in Saint Paul.

Principal speaker was Dr. William Mann, professor at Northwestern University and grand president of the fraternity. Other speakers included Dr. Burton J. Branton, president of the Minnesota Medical Association; Dr. Harry G. Irvine, associate professor of dermatology at the University of Minnesota Medical School; and J. Gordon Bateman, president of the chapter. Dr. Irvine presented the organization with a photostatic copy of a picture of the chapter's charter members taken in 1896.

Dr. Max Alberts was toastmaster.

Dr. A. V. Stoesser, associate professor of pediatrics at the University of Minnesota Medical School, addressed a meeting of the Omaha County Medical Society in Omaha, February 11.

Dr. Stoesser also was in South Dakota about the middle of February to address two educational institutes on the medical care of the premature infant. The institutes for physicians and nurses, conducted by the South Dakota State Department of Health, were held in Huron, February 17, and in Rapid City, February 19. Miss Gertrude Carlsrud of the Minnesota State Department of Health, nursing instructor in premature infant care, also participated in the institutes.

* * *

Dr. Henry E. Michelson of Minneapolis will present a paper, May 20, on diseases of the skin, at the annual meeting of the North Dakota State Medical Association to be held in Grand Forks, May 18-21. He will also lead a round-table discussion at a noon luncheon, May 20.

Dr. Michelson has also accepted invitations to address the South Dakota State Medical Association at its meeting in Mitchell, May 19 and 20, and the Nebraska State Medical Association, which will meet in Lincoln, May 5 to 8.

Next November he will go to Oklahoma City to address the Oklahoma City Clinical Conference, November 3-6, 1941, as one of sixteen guest speakers. Approximately 650 doctors from Oklahoma, Kansas, Missouri, Arkansas, Colorado, Texas and New Mexico will participate in this meeting.

* * *

Three Minnesotans participated in the fifteenth annual meeting of the National Conference on Medical Service (formerly the Northwest Regional Conference) in Chicago, February 16.

They were Dr. William A. O'Brien of Minneapolis, director of postgraduate medical education at the University of Minnesota Medical School; Walter F. Finke, director of the Minnesota Division of Social Welfare of the Department of Social Security, Saint Paul; and Dr. Alfred W. Adson of Rochester, chairman of the Medical Advisory Committee to the Minnesota Division of Social Welfare.

Dr. O'Brien participated in a discussion of state medical societies' postgraduate programs and spoke on the subject, "As Carried On in Minnesota; a Coöperative Program."

Mr. Finke and Dr. Adson presented a paper on "Minnesota's Plan for the Care of the Medically Indigent."

* * *

Elizabeth Kenny, Australian nurse who has demonstrated her method of treating infantile paralysis at the Minneapolis General Hospital for the past nine months, sailed recently for her home in Brisbane to assemble a technical staff preparatory to establishment of treatment facilities at the University Hospitals. She will return to Minneapolis in May.

For the past nine months she has demonstrated her method of treatment at General Hospital, working under the supervision of Dr. Wallace Cole, head of the department of orthopedic surgery at the University and now director of the American Hospital in Britain; Dr. John H. Moe, chief of orthopedics at General Hospital; Dr. Miland E. Knapp, chief of physiotherapy at General Hospital, and Dr. John F. Pohl, attending orthopedic surgeon at General Hospital. Her work is partially supported by the National Foundation for Infantile Paralysis.

* * *

Among the twenty-two new Fellows in the Mayo Foundation at Rochester are Dr. John H. Rosenow, son of Dr. and Mrs. E. C. Rosenow of Rochester, who is a graduate of Harvard University Medical School, and Dr. Delmar R. Gillespie of Lakota, North Dakota, who received his M.D. from the University of Minnesota Medical School.

Others are: Dr. Guy W. Daughtery of Fayetteville, West Virginia; Dr. Philip D. Gelbach, Evans City, Pennsylvania; Dr. Julian P. Levinson, Brownsville, Pennsylvania; Dr. Francis R. Manlove, Philadelphia; Dr. Gideon R. Wells, Chicago; Dr. C. Hal McCuistion, Austin, Texas; Dr. J. Wayne McFarland, Los Angeles; Dr. Edward E. Cannon, Chicago; Dr. Edward T. Clarke, Houston, Texas; Dr. Charles V. Demong, Syracuse; Dr. Charles H. Evans, Waddington, New York; Dr. A. Wesley Hildreth, Bay Shore, New York; Dr. Hiram D. Hilton, Lincoln, Nebraska; Dr. Spencer K. Phillips, Freeport, Illinois; Dr. Thomas S. Sexton, Sistersville, West Virginia; Dr. Frederick H. Smith, Ailsa Craig, Ontario; Dr. Henry R. Large, Cleveland; Dr. Samuel M. Brooks, St. Johnsbury, Vermont; Dr. Thomas N. Foster, San Jose, California; Dr. Gustav O. Kruger, Jr., of Washington, D. C.

Dr. Abel N. A. Canonicao, a Rockefeller Foundation Fellow, is working with Dr. F. C. Mann and his associates at the Institute for Experimental Medicine.

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The following medical reserve corps officers have been ordered within the past few weeks to extended active duty:

Dr. Edwin Grimshaw Benjamin, Minneapolis, first lieutenant, to Fort Sam Houston, Texas.

Dr. Harold Clark Johnson, Thief River Falls, first lieutenant, to Fort Sam Houston, Texas.

Dr. Ralph Burnsell Kettlewell, Sauk Center, captain, to Fort Riley, Kansas.

Dr. Frank Lloyd Richardson, Minneapolis, first lieutenant, to Carlisle Barracks, Pennsylvania.

Dr. Byron Lee Gifford, Long Prairie, first lieutenant, to Camp Murray, Tacoma, Washington, and to Randolph Field, Texas, after which he will become flight surgeon with the air corps.

Dr. Henry Burton Grimes, Madelia, major, to Fort Ord, Presidio of Monterey, California.

Dr. John Kenneth Helferty, Tracy, first lieutenant, to Fort Ord, California.

Dr. Jules Owens Meyer, Grand Rapids, first lieutenant, to Fort Ord, Presidio of Monterey, California.

Dr. Joseph Herman Sagi, Minneapolis, first lieutenant, to Fort Lewis, Washington.

Dr. Rosel Theodore Seashore, Minneapolis, first lieutenant, to Fort Ord, Presidio of Monterey, California.

Dr. Donald Edward Stewart, Grand Rapids, first lieutenant to Fort Lewis, Washington.

Dr. David Albert Burlingame, Minneapolis, first lieutenant, to William Beaumont General Hospital, El Paso, Texas.

Dr. Raymond Paul Hawkinson, Robbinsdale, captain, to Fort Des Moines, Iowa.

Dr. Charles King Holmes, Minneapolis, lieutenant colonel, Minneapolis to Hot Springs, Arkansas.

Dr. Abraham Benjamin Rosenfield, Hibbing, captain to Hot Springs, Arkansas.

Dr. Russell Olay Sather, Crookston, captain, to El Paso, Texas.

Dr. Jacob Allan Sheinkopf, Minneapolis, captain, to Hot Springs, Arkansas.

Also Dr. Andrew W. Shea, first lieutenant, Minneapolis; Dr. John Mendenhall Snyder, captain, Rochester; and Dr. Robert Woodruff, first lieutenant, Rochester.

In Memoriam

Edmund Levings Warren

Dr. E. L. Warren, eye, ear, nose and throat specialist of Saint Paul, died February 19, 1941, following a month's illness.

Dr. Warren was born June 26, 1884, in New York City, the son of Mr. and Mrs. Alvah H. Warren. He came to Saint Paul at an early age. He attended the Irving School and later Mechanic Arts and Central High Schools; he graduated from Central High School in 1904.

After two years of academic work at the University of Minnesota he took his medical course at the College of Physicians and Surgeons, Columbia University, graduating in 1910. His internship was taken at the New York City Hospital in 1911 and 1912 and post-graduate work at the Manhattan Eye, Ear and Throat Hospital, New York City.

Dr. Warren passed the state board examinations in New York, Washington and California and practiced in New York and Pasadena before locating in Saint Paul in 1914. He was a member of the executive committee of the Children's Hospital and a member of the staffs of Saint Luke's, Miller, Saint Joseph's and Gillette Hospitals.

An ardent hunter, fisherman and outdoor enthusiast, Dr. Warren periodically wrote articles which appeared in sporting magazines. One trip on horseback into the wilds of the Canadian Rockies after big game and another into the mountains of Idaho provided trophies for Dr. Warren and material for his pen.

Dr. Warren was a member of the Psi Upsilon Fraternity, the Ramsey County Medical Society, and the Minnesota State and American Medical Associations.

Dr. Warren is survived by his widow, Helen Powers Warren, two sisters, Mrs. M. S. Stringer, Saint Paul, and Mrs. R. Kingsland Hay, New York City, and a brother, A. H. Warren, of Pittsburgh, Pennsylvania.

Dr. Warren had the distinction of having had a tracheotomy performed on him for membranous croup in infancy by Dr. Jacoby of New York. He, himself, used to tell of performing an emergency tracheotomy with his pen knife on a fellow traveler on a train bound for the west before he had passed his state board examinations. The cap of his fountain pen was used for a tracheotomy tube.

Possessed of an unusual kindliness of heart, Dr. Warren was blessed with many close friends both within and outside the profession.

William David Beadie

Dr. William D. Beadie, formerly superintendent of Mineral Springs Sanatorium, Cannon Falls, Minnesota, died at Windom, Minnesota, on February 7, 1941.

Dr. Beadie was born in Toronto, Canada, on June 15, 1874. His parents were both natives of Scotland. When he was thirteen years of age he moved with his family to Lachine, a suburb of Montreal. He attended school there and took his medical course at McGill University, where he graduated in 1900.

After graduating from McGill University Medical School, Dr. Beadie came to Windom, Minnesota, where he practiced general medicine until 1910. In 1910 he moved to Saint Paul and practiced general medicine there until 1917. In 1917 he was made superintendent of Pokegama Sanatorium. In 1923 he took the position of superintendent at Mineral Springs Sanatorium. He held this position until he resigned on account of illness at the end of December, 1940. During his régime Mineral Springs grew from a two-county to an eight-county institution largely through his efforts.

In December Dr. and Mrs. Beadie moved to Windom to be with Mrs. Beadie's sister, Miss Margaret McGregor.

Dr. Beadie married Elizabeth McGregor of Windom, October 21, 1903. Mrs. Beadie and a son, William, of Saint Paul and two grandsons survive.

During his residence in Saint Paul Dr. Beadie was a member of the Ramsey County Medical Society and later became a member of the American Trudeau Society and the National Tuberculosis Association.

When Dr. Beadie was forced to retire as superintendent of Mineral Springs Sanatorium because of illness, the December issue of the *Sanscript*, the publication of the sanatorium, was devoted to his praise. This must have been a source of real satisfaction to him. Perhaps "perfect gentleman" best described Dr. Beadie in the eyes of his many friends.

John P. Hiebert

Dr. John P. Hiebert, Minneapolis, died October 11, 1940, at the University Hospital.

Dr. Hiebert was born at Mountain Lake, Minnesota, in 1876. He obtained his medical degree at Northwestern University Medical School in 1905, and began practice in Minneapolis in 1914. He was Chief of Staff at Asbury Hospital in 1938 and was a member of the Eitel, Abbott and Asbury Hospital staffs. He was active in practice until two weeks before his death.

Dr. Hiebert is survived by his wife, three brothers and four sisters.

MEDICAL BROADCAST FOR MARCH

The Minnesota State Medical Association Morning Health Service.

The Minnesota State Medical Association broadcasts weekly at 11:00 o'clock every Saturday morning over Station WCCO, Minneapolis, Station WLB, University of Minnesota, and KDAL, Duluth.

Speaker: William A. O'Brien, M.D., Professor of Preventive Medicine and Public Health, Medical School, University of Minnesota.

March 8—Records of Birth
March 15—Life's Increasing Span
March 22—Diseases of Middle Life
March 29—Orthodontia

DR. SCUDDER TO SPEAK AT ROCHESTER

Dr. John Scudder of the Columbia University College of Physicians and Surgeons in New York City, who will come to Minneapolis to address the regional meeting of the American College of Surgeons, March 10, 11 and 12, will also lecture in Rochester.

He will speak there, March 6, on the subject, "Blood Studies in Shock as a Guide to Therapy."

CLARENCE M. JACKSON LECTURE

The Clarence M. Jackson lectureship, established by Phi Beta Pi medical fraternity, will be delivered by Dr. Carl R. Moore, chairman of the department of zoölogy at the University of Chicago, March 19, at the University of Minnesota.

His subject will be "The Significance of Hormones in Embryonic Sex Differentiation."

JOHN PHILLIPS MEMORIAL AWARD, 1941

The Board of Regents of the American College of Physicians has awarded the 1941 John Phillips Memorial medal to Dr William Christopher Stadie, Associate Professor of Research Medicine at the University of Pennsylvania, for his contributions to the knowledge of anoxia, cyanosis and the physical chemistry of hemoglobin, and more especially for his recent studies on the subject of fat metabolism in diabetes mellitus.

The recipient will present the work mentioned at the next annual session of the college.

STATE MEETING

Surgery of trauma will be the general subject of an entire day's program to be presented in connection with the 88th Annual Meeting of the Minnesota State Medical Association, May 26, 27 and 28, at the Saint Paul Auditorium.

For this program, scheduled for Tuesday, May 27, surgeons of all Northwest railways will join with the Association, and several outstanding guest speakers have been invited to participate. The Great Northern Railway Association will hold its own annual sessions in Saint Paul on the day preceding so as to be present for this program.

Emphasis in selection of all subjects and speakers has been placed, according to the Committee on Scientific Assembly, on the special interests and needs of the general practitioner.

Round-table luncheons are being arranged for each day of the meeting and an Open House and "Gay Nineties" show will be held in the exhibit hall Monday night. Tuesday night will be devoted to the annual banquet of the Association.

Among distinguished visiting speakers already scheduled for the three-day meeting are Dr. Edward D. Churchill, John Homan, professor of surgery at Harvard, who will come under the sponsorship of the Saint Paul Clinical Club; Dr. H. H. Kessler of Newark, N. J., and Dr. Walter Simpson of Dayton, Ohio, who is sponsored by the Northern Minnesota Medical Association.

Physicians from all the Northwest states will be invited to attend the sessions.

CLINICAL RESEARCH CLUB

A new organization at the University of Minnesota Medical School is the Clinical Research Club, which will become affiliated with the newly organized American Federation for Clinical Research. An organization meeting of the federation, which is to be a society of young men and women interested in and carrying on clinical investigation, is to be held May 5 in Atlantic City, New Jersey.

Dr. John A. Layne is chairman of the University of Minnesota Club. Members of the advisory board are Dr. John Anderson, pediatrics; Dr. Clarence Dennis, surgery; Dr. Robert Hebbel, pathology.

Meetings will be held the first Monday of each month.

MINNESOTA DERMATOLOGICAL SOCIETY

The twenty-fifth anniversary of its founding was celebrated February 22 by the Minnesota Dermatological Society with a clinic at the University Hospitals in Minneapolis and a dinner at the Minneapolis Club. Members of the Chicago Dermatological Society were guests.

Honored at the dinner were founders of the organization, which is one of the older dermatological societies of the country. Founders include Drs. John Butler, Samuel E. Sweitzer and Clifton A. Boreen of Minneapolis; Drs. Charles D. Freeman, John M. Armstrong and Henry N. Klein of Saint Paul.

Speakers were Dr. Sweitzer, who presented the history of the organization; Dr. J. H. Mitchell of Chicago, who discussed the activities of the society's nearest

neighbor, the Chicago Dermatological Society; and Professor Morris Oppenheim of the University of Chicago, and formerly of Vienna. He discussed the old Vienna clinics.

The Minnesota Dermatological Society, which has had a big influence in the shaping of dermatological thought of this part of the country, is composed of members from the Twin Cities, Duluth, Rochester. The Society conducts monthly clinical sessions. A special meeting is held during the summer in Rochester, Duluth or Winnipeg.

Dr. Henry E. Michelson of Minneapolis and Dr. Francis W. Lynch of Saint Paul were in charge of arrangements for the twenty-fifth anniversary meeting.

DU BOIS ELECTED FEDERATION PRESIDENT

At the annual meeting of the Federation of State Medical Boards, held at Chicago on February 17 and 18, 1941, Dr. Julian F. Du Bois of Sauk Center, Minnesota, was unanimously chosen as president-elect of the Federation. Dr. Du Bois will succeed Dr. J. Earl McIntyre of Lansing, Michigan, president of the Federation during the present year.

All state medical examining boards are eligible for membership in the Federation, and at the present time, thirty-nine states are represented in its membership. The purpose of the Federation is to keep itself and its members informed concerning the medical and other healing art practice acts of the various states and of foreign countries. Consideration is given, from time to time, of suggestions made relating to medical education and licensure. It sponsors a program each year in which the various problems confronting the medical examining boards of the various states, are discussed. The guest speaker of the Federation banquet this year was Ray Lyman Wilbur, M.D., president of Stanford University and chairman of the Council on Medical Education and Hospitals of the American Medical Association. Dr. Wilbur will be remembered by many members of the medical profession as Secretary of the Interior in the Cabinet of former President Hoover.

The Minnesota State Board of Medical Examiners has been very active in the Federation since its organization twenty-seven years ago, and the selection of Dr. Du Bois, in addition to being a personal tribute to him, brings further honor to the medical profession of Minnesota and to the Minnesota State Board of Medical Examiners. Dr. Du Bois was first appointed a member of the Minnesota State Board of Medical Examiners by former Governor Theodore Christianson. In 1935 he was made secretary of the Board and he has acted in that capacity since that time.

BROWN-REDWOOD MEDICAL SOCIETY

Members of the Brown-Redwood Medical Society and the Women's Auxiliary held an annual dinner at Springfield, January 29.

Dr. H. Mortensbak of Hanska is president of the society. Other officers are Dr. E. J. Wohlrabe, Springfield, vice president, and Dr. O. B. Fesenmaier of New Ulm, secretary-treasurer.

FREEBORN COUNTY MEDICAL SOCIETY

Dr. A. Gullixson of Albert Lea was elected president of the Freeborn County Medical Society at its annual meeting, February 5, in Albert Lea. Other officers are: Dr. Paul Gamble, vice president; Dr. L. R. Prins, secretary; Dr. D. L. Donovan, treasurer.

SCOTT-CARVER MEDICAL SOCIETY

Dr. C. C. Chatterton of Saint Paul and Dr. Malvin Nydahl of Minneapolis addressed the Scott-Carver Medical Society, February 11. Dr. Chatterton spoke on "Fractures of the Elbow" and Dr. Nydahl explained the "Functions of the Crippled Children's Bureau."

Dr. Francis Lynch of Saint Paul addressed the society in December. His subject was "Treatment of Common Skin Disorders."

UPPER MISSISSIPPI MEDICAL SOCIETY

Dr. John P. Hawkinson of Crosby was elected president of the Upper Mississippi Medical Society at the organization's winter meeting. He succeeds Dr. Nesmith Nelson of Brainerd.

Other officers named are: Dr. R. A. Murray of Aitkin, first vice president; Dr. C. W. Vandersluis of Bemidji, second vice president. Dr. G. I. Badeaux of Brainerd was reëlected secretary-treasurer.

Dr. B. A. Smith of Crosby and Dr. Badeaux were selected delegates to the State Medical Association meeting, while Dr. A. M. Watson of Royalton, and Dr. John Thabes, Jr., of Brainerd were named alternates.

Dr. Smith was reëlected for a three-year term on the board of censors. Other board members are Dr. W. W. Will of Bertha and Dr. John Thabes, Sr., of Brainerd.

The spring meeting of the group will be held in Aitkin, the summer meeting in Bemidji, the fall session in Little Falls, the election meeting next year in Brainerd.

WASHINGTON COUNTY MEDICAL SOCIETY

The regular monthly meeting of the Washington County Medical Society was held on February 11 at the Stillwater Club rooms, Stillwater, Minnesota. Dr. John M. Culligan of Saint Paul, guest speaker, showed and interpreted slides of x-ray pictures of intravenous and retrograde pyelograms. Dr. D. A. Dukelow, Director of Public Health Education, State Board of Health, spoke about the packets sent by the Minnesota State Medical Association.

WOMAN'S AUXILIARY

MRS. M. A. NICHOLSON, Duluth, Minnesota, *President*
MRS. E. V. GOLTZ, 2259 Summit Avenue,
Saint Paul, *Publicity Chairman*

Headquarters for the Woman's Auxiliary at the annual meeting of the American Medical Association in Cleveland, June 2-6, 1941, will be the Hotel Carter. Reservations should be made with Dr. E. F. Kieger, Chairman Housing Committee, 1604 Terminal Towers Building, Cleveland, Ohio.

State Board Meeting

The mid-winter meeting of the State Auxiliary Board was held in Saint Paul, February 4, at the Commodore Hotel with Mrs. Harry Ghent, Saint Paul, as social chairman. A large group of members attended the business meeting which was held at 9:30 a. m., followed by luncheon at noon and an afternoon session. The state president, Mrs. M. A. Nicholson of Duluth, presided and heard reports from the various county presidents. Dr. William O'Brien spoke at the morning session on "The Control of Cancer." At the luncheon meeting, Mrs. Howard A. Overman of the state committee of the Women's Field Army for the Control of Cancer, also spoke on the subject. Plans for the annual state meeting to be held in Saint Paul in May were discussed and the following nominating committee was named: Mrs. E. M. Hammes, Mrs. Wm. Robert, Mrs. L. Dack, Mrs. A. C. Baker, and Mrs. H. P. Fischer.

Clay-Becker County

Newly elected officers of the Clay-Becker Medical Auxiliary include Mrs. O. O. Larson, Detroit Lakes president; Mrs. C. W. Simmison, Hawley, vice president; Mrs. L. H. Flancher, Lake Park, secretary-treasurer. The Auxiliary, which numbers twelve members, sponsored a sale of articles by the patients of Sand Beach Sanatorium, clearing $93.59. On January 24, Dr. Charles B. Craft talked to the P.T.A. on cancer, a meeting which was open to the public and sponsored by the Auxiliary.

Hennepin County

Members of the Hennepin County Auxiliary enjoyed colored movies of a trip to Guatemala which were shown by Mrs. Harvey Nelson at their recent meeting. Mrs. H. B. Sweetser was chairman for the tea which followed the program and Mrs. Martin Aune and Mrs. J. R. Peterson poured. Assisting members included Mrs. James Blake, Jr., Mrs. A. C. Kirkhoff, Mrs. Robert Quello and Mrs. R. F. McGandy.

A net amount of $1,203 was realized through the sale of articles made by patients at Glen Lake Sanatorium. The proceeds were turned over to the patients.

Mower County

Mrs. Paul Leck of Austin entertained the Mower County Auxiliary at a dessert luncheon January 28. Following the business session, Mrs. C. L. Sheedy read a paper pertaining to the future practice of medicine. A social hour at bridge followed. Mrs. J. E. Eckdale of Lyle, a prospective member, was a guest.

Red River Valley

The Red River Valley Auxiliary were guests of Mrs. W. E. Mercil the evening of December 3, following the dinner meeting of the Medical Society at which they were guests. There were fourteen members present including several out-of-town members. At the business meeting reports were received on the tuberculosis essay contest for which the auxiliary provides cash awards. Out-of-town guests included Mrs. D. V. Boardman, Mrs. E. Haugseth of Twin Valley and Mrs. W. H. Hollands of Fischer and Mrs. A. Shedlov of Fosston.

Rice County

Rice County Medical Auxiliary held a meeting January 16 at the home of Mrs. S. B. Haessly in Faribault. Miss Muriel Young, visiting nurse, was a guest. The afternoon was spent in knitting and sewing for the Rice County chapter of the Red Cross followed by tea and a social hour.

Upper Mississippi

Upper Mississippi Medical Auxiliary recently elected the following new officers: Mrs. A. E. Amundson, Little Falls, president; Mrs. H. W. Lee, Brainerd, president-elect; Mrs. J. P. Hawkins, Crosby, vice president; Mrs. Douglas Johnson, Little Falls, secretary. Mrs. Lee was reëlected treasurer and Mrs. George Halladay acting secretary for the remainder of this year. Following the business meeting held at the Ransford Hotel, a dinner was served for twenty-one. Mrs. Nesmith Nelson, retiring president, presided. After dinner two essays were read by the winners in the Tuberculosis Essay Contest.

PHYSICIANS WANTED FOR CCC DUTY

Physicians are needed for the medical service of the Civilian Conservation Corps. The initial salary is $3,200 per annum. No quarters for families are provided, and the physicians are required to pay for their food at camps. Temporary quarters for physicians are provided at the camps for a nominal fee. Physicians selected for this service are required to pay their own travel expenses to the headquarters of the district in which they are to be employed, where they are put on temporary duty for instructional purposes before being sent to camps. Travel expenses incurred in the transfer of physicians from the district headquarters to camps or in transfer from one camp to another are paid by the Government.

The principal duties at camps consist of the medical care of the enrollees and the practice of preventive medicine. To be eligible for this service, the physician must be a citizen of the United States, a graduate of an accredited medical school authorized to confer the degree of doctor of medicine, licensed to practice medicine, and physically able to perform the duties involved. Physicians sixty years of age or over will not be employed.

All physicians interested in this type of service are requested to submit their applications to the Office of the Surgeon, Headquarters Seventh Corps Area, Federal Building, Omaha, Nebraska, giving date on which available and preference of assignment in the following states: Minnesota, North Dakota, South Dakota, Iowa, Nebraska, Missouri, Kansas, and Arkansas.

It is requested that young physicians not now listed in the American Medical Directory be informed of this service.

TRANSACTIONS OF THE MINNEAPOLIS SURGICAL SOCIETY

Stated Meeting, Thursday, October 3, 1940

PRESIDENT JAMES A. JOHNSON, M.D., in the chair

SECRETARY R. F. McGANDY, M.D.

INGUINAL HERNIA FOLLOWING ABDOMINAL SURGERY*

MARTIN NORLAND, M.D.
Minneapolis

UNSATISFACTORY RESULTS FROM THE INJECTION TREATMENT OF HERNIAS COMPARED TO SURGICAL REPAIR*

HARVEY NELSON, M.D.
Minneapolis

COMPLICATIONS ASSOCIATED WITH THE TREATMENT OF HERNIA†

Injection versus Operative Treatment

CARL O. RICE, M.D.
Minneapolis

It has been difficult to evaluate the benefits of the injection treatment of hernia as compared with the surgical treatment because, there is no doubt, the two series of cases are different, or if they are not, they should be. It is true that many cases which are suitable for operation are not suitable for injection. For that reason, among others, many of the opponents of the injection treatment prefer to dismiss injection treatment by merely stating that, if it is of no value for the cases that cannot be operated, then it has no value at all. Such a contention, of course, is erroneous.

By presenting the complications and sequellæ which occur with each method of treatment, I hope to show that the injection treatment of hernia should have a place in our surgical armamentarium.

Of 300 patients who consulted me for examination and advice, 215 (71.6 per cent) were advised that injection would be satisfactory. One hundred sixty-eight (56 per cent of the total) returned and received a full course of treatments, namely, were treated until cured or until they were convinced they could not be cured.

All complications and sequellæ were carefully recorded in these cases and are listed in the accompanying table.

COMPLICATIONS AND SEQUELLÆ FROM INJECTION TREATMENT

	Cases	Per Cent	
None	126	75	
Sterile Abscess	4	2.3	
Allergic Reactions	4	2.3	8.3
Anaphylactic—2			
Urticarial—2			
Vein Punctured (No hematoma)	6	3.7	
Induration of Cord	10	5.9	
Soreness	16	9.5	
Omentum in Sac	1	.7	
Deaths	None	None	

It is seen from these figures that in 8.3 per cent of the cases an undesirable and potentially dangerous reaction occurred. The other sequellæ were of no serious consequence and did not add to the risk of treatment.

Induration of the cord indicates an excessive reaction to the injection fluid, but usually assures a cure.

Soreness as experienced in 9.5 per cent of the cases was of no serious consequence, and probably indicates only a lesser degree of tolerance to pain than most individuals experience.

In the one case in which the omentum could not be reduced from the hernial sac after injections had been started it became necessary to discontinue the treatment. This in no way added to the risk of treatment, nor to the difficulty of a subsequent operation.

The details of the end-result in these cases will not be dealt with in this paper, but I can definitely state that seventeen (15 per cent) of these failed to obtain a cure. The causes of failure were as follows:

Obesity	8
(Six of these had been advised against injection, but decided to try it anyway.)	
Postoperative Cases	4
(Three had been advised against treatment.)	
Omentum in Sac	1
Became Allergic	2
Lack of Coöperation	2

Strangely, fourteen physicians (9 per cent) were included in this group of 168 patients. Five were advised against the treatment, but preferred to try it. There was failure in three of these.

This series may be compared with a somewhat larger group of 868 patients who were seen at the Minneapolis General Hospital, upon whom 555 operations were performed. The following complications occurred.

COMPLICATIONS FOLLOWING OPERATION

	Cases	Per Cent	
Primary Healing	389	70	
Abscess	3	.5	27.3
Stitch Infection	5	.9	
Wound Break Down	19	3.4	
Serous Exudate	64	11.4	
Wound Infection	31	5.4	
Bloody Exudate	22	4.1	
Hematoma	11	2.0	
Induration of Wound	6	1.1	
Ecchymosis	2	.4	
Deahts	5	.9	

*Presented at the meeting but not submitted for publication.

†Assistance in the preparations of these materials was furnished by the personnel of Work Projects Administration, Official Project No. 65-1-71-140, Sub-project No. 361.

It is true that most of these 555 operations were performed by house physicians whose experience is not as great as that of the staff surgeons, but the fact that 27.3 per cent of the operated cases developed undesirable local wound reactions is in itself quite alarming. The remaining 1.5 per cent of local wound sequellæ were not particularly serious.

In addition to these local complications a certain number of patients also developed systemic complications which probably would not have occurred had the patient not been operated upon. These are as follows:

SYSTEMIC COMPLICATIONS FOLLOWING OPERATION

	Cases	Per cent
Pneumonia	20	3.6
Bronchitis	12	2.1
Cough	31	5.6
Thrombophlebitis	1	.18
Embolism	4	.7
Empyema	5	.8
Intestinal Obstruction or Paralytic Ileus	32	5.7
Pulmonary Edema	9	1.5
Shock	6	.9
No systemic complications	435	78

Though I cannot give in this preliminary report the figures relative to the seriousness of the condition of these patients before operation, I do not wish to leave the impression that all of the hernias were uncomplicated. Neither were all these patients poor surgical risks. A more detailed report will be made later. I wish only to call attention to the fact that hernia surgery is not as simple as we are sometimes led to believe.

I do desire to emphasize that the incidence of complications and sequellæ following operations for hernia are not less than those following injection. It seems that it is justifiable to conclude that with proper selection, the injection treatment of hernia does have a place in our surgical armamentarium.

Discussion

DR. MARTIN NORDLAND: Is there any percentage of sterility following injection treatment?

DR. CARL O. RICE: As far as it has been possible to determine, there have been no cases of sterility nor atrophy of the testicle resulting from the injection treatment of hernia. Dr. Charles Rea has made a study of this, and was unable to find a higher incidence of aspermia in bilaterally injected individuals than in an uninjected group of individuals. We all have no doubt seen cases of testicular atrophy following herniaplasty. I have never observed one following the injection treatment for hernia.

DR. JAMES M. HAYES: Can injection treatment be used in postoperative hernia or with old men who have weakened abdominal walls?

DR. RICE: I do not choose to treat postoperative hernias. Sometimes patients insist that I try, even though I advise against it. If such is the case I see no harm in trying. In a few instances I have been successful, though I do not recommend it. The sooner we learn the contraindications for injection and the more accurately we adhere to them, the quicker we will be able to place the injection treatment in the catagory to which it belongs. A relaxed abdominal wall in an old patient is not in itself a contra-indication for the injection treatment.

FIBROMA OF THE VAGINA

Report of Case

IVAR SIVERTSEN, M.D.

Minneapolis

Dr. George Ernest Herman states in his book on "Diseases of Women" that fibroids of the vagina are so rare that no one can describe them from actual personal experience. He quotes John Phillips: "that an account of them must be based on collections of them in books and case reports."

William Esterly Ashton, in his textbook on "Practice of Gynecology" gives a very good description of the condition but states that the cause is unknown.

Dr. Frank Lynch in his monograph "Pelvic Neoplasms," states that fibromyoma of the vagina rarely originates in the vagina, and that up to 1886 only six cases were collected; and quotes Smith, in 1902, that 100 cases had been collected; Potel, in 1903, extended the list to 150 cases; Müller, in 1914, and Geisecke in 1915 made careful studies and the latter author cites 196 cases.

Dr. Hamlin Mattson, of our city, who reported a case in October, 1934, in the *Journal of the American Medical Association*, of such a tumor, states that about 200 of these cases have been reported in the literature, quoting W. P. Graves for this statement.

In studying these cases it might be wise to review briefly the anatomy as well as the anatomical relations of the vagina.

The vagina extends from the vulva upwards and backwards for about three inches. Its anterior wall measures only about 2 inches, whereas the posterior wall measures 3 inches.

There are two layers of muscles, an internal circular one, and an outer longitudinal. There is no true sphincter for the vaginal orifice, but the anterior fibers of the levatorani and the superficial perineal muscles act as a sort of sphincter.

The naked eye appearance of the vaginal wall shows transverse rugæ, and these are seen both on the anterior and the posterior aspects. Microscopically, the mucosa consists of connective tissue papillæ which are covered by several layers of squamous epithelium and has no mucous glands or ducts. The vaginal secretion is a transudation from the blood vessels mixed with mucus which is secreted by the cervix. The presence of the bacillus of Döderlein causes an acid reaction of the vaginal secretion. The vaginal portion of the cervix also consists of squamous cell epithelium.

The anatomical relations of the vagina are as follows: In front the vaginal wall is in relation to the urethra and the neck of the bladder, and hence a sound or catheter passed into the urethra is distinctly felt through the anterior vaginal wall. The neck of the bladder is also palpable through the anterior vaginal fornix, and it is possible that a body, such as calculus or tumor in the bladder, can be recognized on bimanual examination.

Behind, it is separated from the anus by the perineal body, above which we find the recto-vaginal septum. Foreign bodies or feces in the rectum are easily felt through the posterior vaginal fornix and wall.

Vaginal tumors are very rare. The most common tumor of the vagina is the cysts, and next in order is the fibroids. Carcinoma is probably never primary. Sarcomata are, at times, seen in children, and secondary nodules of chorio-epithelioma, and even tuberculosis nodules have been described.

Most authors agree that the etiology of fibroids is unknown. Some authors have explained them on the same basis as uterine fibroids and adenomyomata. Most of these cases occur in the third or fourth decades of life, although they have been occasionally reported in children.

Classification.—Fibroid tumors having their origin in the uterus, which have grown down into the connective tissue and forced their way into the vagina, are excluded from this classification. Also pedunculated growths in the cervix that become adherent to the vaginal wall do not belong in this group.

Location.—True vaginal fibroids develop mostly on the anterior vaginal wall, though cases have been found rarely on the posterior wall.

Form, Size, and Appearance.—Most authors agree that these tumors are usually single, although apparently multiple fibroids have been reported. They appear as hard, round, nodular tumors, usually of small size, although larger tumors have been described, the average size being one or two inches in diameter. One fibroid has been reported that weighed 625 grams. They grow from beneath the mucus membrane of the vagina and are frequently pedunculated, though sessile tumors are more frequently described. They are covered by a fibrous capsule and on the anterior surface the mucus membrane of the vagina covers the tumor mass. Ulceration of the mucus membrane is often seen, due to irritation from friction, etc.

Histologically, the picture is much the same as that found in fibroids of the uterus, and are made up of smooth muscle bundles and connective tissue in variable proportions and more or less fibrous tissue.

Degeneration, which takes place in fibroid tumors of the uterus, has been noted also in the vaginal type of fibromata.

Effect of Pregnancy.—If pregnancy occurs, these growths may enlarge tremendously, much the same as is seen in uterine tumors.

Symptoms.—If the growths are small, there are no symptoms noted and the mass may be found during a routine physical examination. If, however, the tumor is large, the patient will complain of a swelling in the vagina, and may have some discharge, mucoid or even bloody, depending upon the presence of ulceration. Bearing down pains or symptoms due to pressure, especially upon the bladder or rectum, are present in the larger growths. In the presence of a tumor of any size, dyspareunia is common, and sexual relations are not possible.

Diagnosis.—It would appear that the diagnosis should be simple, but at times it may be very difficult, due to its rarity. If the tumor is so large that it distends the vagina it is not possible to ascertain the site of the growth and it may be difficult to differentiate it from a vaginal cyst.

Treatment.—This is surgical and offers no difficulty, as a rule. If the mass is pedunculated, it is very easily removed, after which the vessels are ligated and the vaginal edges are brought closely together.

The prognosis is always good. These tumors do not recur.

Case Report

Mrs. L. E. N., a housewife, forty-six years of age, came for examination relative to a laceration she believed she had received at the birth of her last child eleven years before. She had no complaint except that a mass seemed to descend into the vagina on voiding. She had no urinary symptoms and no pain. There was some inclination to constipation. She had noticed no discharge.

The family history was negative and aside from a gall-bladder attack several years previous her past history was irrelevant.

Examination showed a fairly well-nourished woman of 112 pounds, somewhat pale. Her blood pressure was 164-90, temperature 99.6, pulse 124. There appeared to be a widening of the palpebral fissures. No murmurs were heard in the heart and the lungs were normal.

Menstrual history had been normal, two pregnancies had been carried to full term and there had been no abortions. On pelvic examination there was a tumor about the size of a large orange protruding from the anterior vaginal wall. The urethra was pushed down and seemed outside of the tumor. The mass was completely outside the labia and it was with some effort that it was pushed back into the vagina. There was an old laceration, grade 2, of the perineum. The uterus seemed normal in size and was freely movable. The adnexa were normal. Large vessels were apparent on the anterior wall of the vagina.

Radiograph of the bladder region showed no evidence of calculi. A rounded area of density was seen above the pubic bone, the tumor having been pushed into the vagina for this examination.

Due to our inability of making a diagnosis, consultation was asked, and Dr. Meland examined the patient on May 2, 1940. Cystoscopic examination was made and Dr. Meland gives the following report: "There was a large mass in the anterior wall of the vagina, which presented through the introitus. The size of the mass was that of a small grapefruit. The urethral orifice is eccentrically placed on the left anterior surface of the mass. Catheter could be passed without difficulty. Following this the patient was cystoscoped. The urethra was somewhat tortuous but was not involved by extension from the growth. Bladder was normal. Both ureteral orifices were normal. Diagnosis: Tumor of the vaginal wall which has not invaded the urethra."

Blood examination showed: hemoglobin 84%, red blood count, 4,400,000; white blood count, 9,000. Meinicke negative. The urin was normal on examination.

Operative Procedure: Incision was made longitudinally below the urethra down toward the cervical

area, through the mucous membrane and fascia, after which the mass was removed by scissors and blunt dissection. The bleeding vessels were clamped and ligated. About 2 inches of the mucous membrane of the anterior vaginal wall were removed, after which it was sutured transversely in two layers. A small catgut drain was laid in the upper angle, and the vagina was packed with small iodoform gauze.

The tumor measures 5.5 by 7 cm. and weighed 110 grams.

Pathologic report: Fibromyoma, benign.

The patient remained in the hospital from May 7, 1940, to May 20, 1940. The wound was entirely healed, and she has had no recurrence nor difficulty.

I wish to express my gratitude to Dr. Ernest Meland, Dr. Skjold, and Dr. Baker, for their interest in the preparation of this report.

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Discussion

DR. J. M. HAYES: I have been much interested in the injection method of treating hernias ever since Drs. Bratrud and McKinley started this method at the University about ten years ago. I was there on alternate days with these men and started to do the injections about the same time. While I have not been so enthusiastic about this procedure as they have, I do believe it has a place in the treatment of hernia.

I have used injections for certain classes of cases during these ten years. There is no doubt but what there is a high rate of recurrence.

Injections do work well in children when properly done, but the time required and the need for repeated injections often prove objectionable. For men who have a job and do not desire to lay-off long enough for operation, this method is quite satisfactory. They may come to the office and be injected and go back on the job without losing time. When the hernia seems cured, they are discharged and told to come back any time there seems to be the slightest recurrence. If there seems to be any recurrence, they are given some more injections. Many patients go on this way with no inconvenience except that of repeated injections.

Those who can readily afford the time and expense I advise to be treated surgically.

DR. STANLEY MAXEINER: Hernias in children frequently disappear following the use of trusses only to reappear later in life when they engage in heavy lifting or athletics. It is my opinion that occasionally postoperative hernias are only the recurrence of a childhood hernia which has been brought about by loss of weight, attenuation of muscle and a loss of muscle tone which results in the reopening of a sac which has never been destroyed.

The United States government does not indorse hernia injections and as a result, this treatment has not been used in our experience at the Veterans Hospital.

PROCEEDINGS of the MINNESOTA ACADEMY OF MEDICINE

Meeting of December 11, 1940

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, December 11, 1940. Dinner was served at 7 o'clock and the meeting was called to order at 8 p. m. by the president, Dr. James Johnson.

There were fifty-four members and one visitor present.

The following officers were elected for the year 1941:

President—Dr. John Armstrong, Saint Paul
Vice President—Dr. Martin Nordland, Minneapolis
Secretary-Treasurer—Dr. E. V. Kenefick, Saint Paul

The secretary read a letter from Mrs. C. B. Wright expressing appreciation for the memorial to Dr. Wright which was read at the November meeting of the Academy.

Dr. Martin Nordland read the following memorial to Dr. Herbert Jones.

HERBERT W. JONES
1873-1940

Dr. Herbert W. Jones, a member of the Minnesota Academy of Medicine since 1911, died suddenly on July 9, 1940. He was a native of Wisconsin, born in Berlin, October 13, 1873, and there he received his early education. His medical course was completed at the University of Minnesota in 1902. His early association with Dr. W. A. Jones prompted him to go to Vienna in 1906 to study neurosurgery. Because of his continued interest in this subject, he developed unusual skill in brain surgery. His thesis read before the Academy in February, 1911, was concerned with the problem of brain surgery.

He was married to Margaret Daniels of Minneapolis in 1909. To them were born three sons, Herbert, Jr., Roderick and David. In spite of his large practice, he found time for companionship with his family and devoted much time to the raising of his sons, one of whom, Herbert, Jr., had the good fortune to practice with his father for a short time. Dr. Jones was very fond of boys and through his generosity several young men were assisted in getting a higher education.

Dr. Jones, a member of the M Club, continued his interest in the University after his graduation. He was very active in the Medical Alumni, for which organization he had served as secretary and president. He belonged to the Nu Sigma Nu medical fraternity and was an honorary member of the American Neurological Association. Besides the Minnesota Academy of Medicine, he was a member of the American Medical Association and the state and county societies. Dr. Jones was a member of the Asbury and Northwestern staffs and was president of the latter in 1936 and 1937.

Farming was his hobby and in the latter years he gave much serious attention to the management of the farms which he owned. Death came to him while he was returning from his farm at Cottage Grove, Minnesota.

Dr. Jones was an earnest, serious worker and a true friend. He enjoyed the meetings of the Academy and attended with regularity.

The scientific program followed.

PANCREATIC LITHIASIS

ALBERT M. SNELL, M.D.
Rochester, Minnesota

Abstract

Eighteen cases of pancreatic lithiasis have been encountered at the Mayo Clinic during the last three years. Roentgenologic evidence of stone was present in each instance; in six cases the diagnosis was confirmed by surgical exploration and in two others the diagnosis was substantiated by necropsy. Review of the literature reveals an increasing number of cases of pancreatic lithiasis and there is much to suggest that the condition is not nearly so uncommon as was formerly believed.

The usual effect of pancreatic stone is destruction of the pancreas; the acinar tissue is destroyed first by a process of fibrous atrophy and fatty replacement. The islands of Langerhans usually are preserved until late in the course of the disease. The principal clinical symptoms are pain of a colicky nature; motor disturbances of gastro-intestinal function, steatorrhea and complicating disorders including fulminant infections, such as tuberculosis, endocarditis, and pylephlebitis, are fairly common.

When the pancreas is more or less completely destroyed, fatty metamorphosis of the liver may ensue. It is suggested that roentgenograms of the pancreatic area should be made of patients who present (1) obscure attacks of abdominal pain or gastro-intestinal "storms" of uncertain origin, (2) diarrhea with fatty stools, (3) unexplained enlargement of the liver with or without ascites, (4) diabetes, particularly if it be associated with such abdominal symptoms as colic or diarrhea, or (5) jaundice of indeterminate origin. The roentgenologic picture is itself characteristic and in most instances should suffice to make the diagnosis.

Treatment of pancreatic stones is necessarily a surgical problem. It is of interest to note that neither pancreatitis, peritonitis nor pancreatic fistula appear to be particularly common during the postoperative state. Early diagnosis should lead to successful treatment in a substantial number of cases.

Discussion

DR. H. B. ZIMMERMANN, Saint Paul: I would like to ask Dr. Snell if any of the patients have been relieved by removal of the stone.

DR. SNELL: This question may be answered in the affirmative. When it has been possible to remove stones from the pancreatic duct, relief has been obtained. A few successful surgical procedures have been reported at the clinic and elsewhere. Most of the patients are seen very late in the course of the disease and are beyond the reach of surgical treatment.

DR. C. N. HENSEL, Saint Paul: Is any special roentgenologic technic used for locating the stones?

DR. SNELL: I think only what would be advised for locating stones of the kidneys and ureters. It is unfortunate that I did not bring some of the original films of these stones to demonstrate. The shadows are opaque and often can be seen throughout the course of the pancreatic duct. There is diagonal distribution of shadows at about the level of the first lumbar vertebra which can be seen easily on either side of the vertebral column. They are usually demonstrated in oblique views of this region.

SOLITARY(?) MYELOMA OF THE SPINE WITH CORD INVOLVEMENT

Case Report

GORDON R. KAMMAN, M.D.
Saint Paul

Mrs. M. N. a widow, aged sixty-nine, was seen in consultation at St. Joseph's Hospital with Dr. W. H. Von der Weyer on October 9, 1940.

The family and past medical histories were irrelevant to the present complaint. Mrs. M. N. stated that aside from "a little arthritis of the spine" in the fall of 1939 she was well until May 18, 1940. On that date while entering a street car she fell landing on the left hip. The conductor helped her up and she boarded the car. There were no immediate symptoms other than generalized aches and pains. Two days following the fall she consulted her family physician who found that the left 9th rib had been fractured. There also was a hematoma of the left hip. The left chest was fixed with tape which the patient wore for about two weeks. During that time her progress was satisfactory and there was no trouble in her legs. About one week after the accident she began to have pain in the *right side* at about the same level at which the rib had been injured on the left. At first this pain was localized but in about two weeks it had assumed girdle characteristics involving the left side as well as the right. The pain was severely aggravated by coughing, sneezing or straining. The patient stated "I have prayed constantly that I never would have to cough." About three months after the accident Mrs. N's legs began to feel numb. This was about August 10, 1940. The numbness started between the knees and the ankles and in one or two weeks had extended above the knees and up to the level of the girdle pains previously described. Shortly after the numbness began the legs grew weak and this weakness increased. For nine days prior to my first examination on October 9, 1940, the patient had been unable to walk. There was no disturbance in sphincter functions and no symptoms referable to the upper extremities or cranial nerves.

The neurological findings were confined to the lower extremities. There was a flaccid paraplegia with preservation of the knee and ankle jerks. There was an extensor plantar response on the left and a positive Chaddock on the right. There was bilateral abortive clonus. The sensory examination revealed the absence of pain sense from the 9th dorsal dermatome down. Temperature sense was intact. Touch sense was absent on the right from the knee down and the lower half of the left leg. Vibration and passive motion were impaired in both ankles.

The diagnosis at that time was incomplete trans-

verse lesion of the spinal cord at the 9th dorsal segment (opposite seventh dorsal vertebra).

Radiographs made of the spine were negative except for marked hypertrophic arthritis involving the dorsal spine and old compression fractures of the bodies of the 12th dorsal and 1st lumbar vertebræ. There also was rather a sharp localized scoliosis of the upper dorsal spine toward the left side. There was no evidence of destruction of the pedicles or the laminæ of any part of the spine.

On October 11, a spinal tap was performed with the patient in the lateral recumbent position. The fluid was clear, slightly yellow and under 8 mm. mercury pressure. On strong juglar compression the pressure rose slowly to about 9 mm. and did not fall upon release of the juglar compression. Upon examination of the fluid one lymphocyte was found. The Wassermann reaction and colloidal gold curve were negative but the protein was elevated to 144 mm. per 100 c.c.

On October 16, 1940, the neurological examination showed the absense of both touch and pain sensation from the 7th dorsal dermatome down and there was paralysis of bladder and bowel functions. My notes made at that time read "This constant sensory level together with the subarachnoid block as demonstrated on the Queckenstedt test together with the elevated CSF protein leads to a diagnosis of rapidly increasing compression of the spinal cord at the seventh dorsal segment. Advise immediate exploration through laminectomy of the third, fourth and fifth dorsal vertebræ." The operation was performed on October 19 by Doctor Von der Weyer. As the neural arch of the fourth dorsal vertebra was exposed some granulation tissue came into view. The arches of the 3rd and 5th dorsal vertebræ were taken off and a mass about two inches in length was encountered. This mass was a dark mahogany color, had a smooth glistening surface and was irregularly shaped. It was entirely extradural. The mass was removed, bleeding controlled and the wound closed in the usual manner. Mrs. N. failed to rally from the operation and died six hours afterwards. Permission was requested for an autopsy but refused.

The pathologist's report submitted by Dr. Thomas J. Kenyon, pathologist at St. Joseph's Hospital, was as follows:

"*Gross.*—On sectioning the tumor it appeared to be composed of white rather friable material.
"*Microscopic.*—The tumor was composed of numerous distinct cells which appeared rather closely packed together. The outline of the cell can be sharply demarcated from the adjoining cell. The nuclei are pushed eccentrically and suggest a plasma type of cell. This picture is frequently seen in multiple myeloma. While there does not appear to be any obvious involvement of the bone with this specimen it is possible this tumor could have extended from the portion of the vertebræ lying more ventrally.
"*Diagnosis.*—Multiple myeloma.
"Later pieces of the bony laminæ removed at the operation were decalcified and numerous plasma cells are noted which are typical of multiple myeloma."

In this case we have no proof whatever that we were dealing with a solitary myeloma. The patient died before we knew the pathological nature of the lesion so radiographs of the skull and long bones were not made. However, it can be said that radiographs of the vertebral bodies as well as ribs and clavicles did not show any myelomatous involvement.

About twenty cases of solitary myeloma are reported in the literature. Some of these showed involvement of the femur, others of the clavicle, one of the mandible, and several of the vertebræ.

Solitary myelomas may be divided into two groups—

1. Those which started as a single lesion and subsequently became generalized.

2. Those in which the lesion remains solitary during the entire period of observation either until the death of the patient or at the time of the original report.

The question arises as to whether or not all solitary myelomata would eventually become multiple. I believe the answer is found in the fact that cases have been reported of solitary myelomata of four, nine and ten years' duration. The question occurs to me as to whether solitary myelomata of this nature and the classical multiple myelomata which are seen so much more frequently are the same pathological entity.

In our case no opportunity was had to determine the Bence-Jones protein in the urine. In the cases reported in literature this was found in practically all of the multiple myelomata and in a fairly high percentage of the solitary ones.

The only similar case found in the English and German literature was one reported from the Massachusetts General Hospital in the early part of this year. It was the case of a patient suffering from a paraplegia of fairly rapid onset. X-ray studies of the spine were negative but at the time of operation involvement of the 11th dorsal lamina was seen. This patient was still alive at the time of the report.

Discussion

DR. A. W. ADSON, Rochester: The case with myeloma reported by Dr. Kamman is unique as far as my limited experience is concerned, since it occurred late in life, grew unusually rapidly and was but a single lesion. I recall two patients on whom I performed laminectomy to relieve cord compression. One was a male who presented a high dorsal lesion with bony destruction of the pedicle. The neurologic symptoms were those of radiculitis and beginning cord compression. Numerous roentgenograms of the spine, skull, long bones and pelvis failed to reveal other lesions. The laminectomy uncovered a friable, reddish, pulpy mass which proved to be a myeloma on pathologic examination. The patient was advised to have massive doses of x-ray therapy. This advice he accepted and went to the Memorial Hospital of New York for his treatment where he received tremendous doses of high voltage therapy. In spite of this, he succumbed to his disease in about two years. Although he had but one obvious lesion at the time of his laminectomy, others soon made their appearance. Therefore, the most that can be hoped for from a laminectomy and partial removal of an intraspinal myeloma is very slight temporary relief. About the same amount of relief is to be expected as from a laminectomy and partial removal of a metastatic lesion of the spine, a result which scarcely justifies the surgical hazard.

The second patient presented the usual symptoms of an intraspinal tumor. Roentgen rays of the local area of the spine failed to reveal bony destruction. After the pathologic diagnosis was made on the tumor tissue, additional examination of the bones revealed other lesions. Again the outcome was the same, a gradual decline with a cachectic death.

DR. JOHN F. NOBLE, Saint Paul: I have had no personal experience with the so-called solitary myelomas. Many of these tumors thought to be solitary will, if followed over a long period of time, prove eventually to be multiple. The generalized character and the destructive nature of the disease was emphasized to me by a case observed at autopsy by one of the men in the department of pathology at the University of

Minnesota. In his zeal to do a complete study of a case of multiple myelomata at autopsy, he took specimens of bone from the spine. The gross appearance of the bone was normal and x-rays of the spine just before death had showed no evidence of tumor involvement. After decalcification, the specimens of bone from the spine in microscopic section showed typical myelomatous infiltration. If, then, bone which is normal in appearance on x-ray and gross examination, can be proved to contain myelomatous tumor cells, I believe we should accept solitary myelomas only after very careful clinical study and autopsy examination.

DR. KAMMAN (in closing): I felt, like Dr. Adson, that multiple myeloma was more likely to be found in young people; but, in looking over Peet's case reports, I noticed there were several patients in the middle age group. Doctor Noble's remarks concerning myelomatous involvements being discovered only after decalcification of the vertebral bodies were very interesting. It goes to show that one can have serious and fatal involvement of bones without roentgenographic evidence early in the course of the disease. In my patient we did not have time for x-ray studies of the skull and long bones because she died six hours after operation.

I still feel, of the cases of solitary myeloma seen, many will become multiple if the patients live long enough. However, there must be such a thing as solitary myeloma. Whether the pathologic changes are the same, I cannot say; but there seems to be abundant clinical evidence to show a solitary myeloma can go on indefinitely without becoming multiple.

The meeting adjourned.

E. V. KENEFICK, M.D., *Secretary.*

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

BOOKS RECEIVED FOR REVIEW

MANUAL OF CLINICAL CHEMISTRY. Miriam Reiner, M.Sc., Assistant Chemist to Mount Sinai Hospital, New York. Introduction by Harry Sobotka, Ph.D., Chemist to Mount Sinai Hospital, New York. 296 pages. Illus. Price, $3.00, flexible binding. New York: Interscience Publishers, Inc., 1941.

MANUAL OF PHYSICAL DIAGNOSIS With Special Consideration of the Heart and Lungs. Maurice Lewison, M.D., Professor of Physical Diagnosis, University of Illinois College of Medicine; Consulting Physician, Cook County Hospital; Attending Physician, Mount Sinai Hospital, Chicago; Formerly Attending Physician and Chief of Tuberculosis Staff, Cook County Hospital; and Ellis B. Freilich, M.D., Associate Professor of Medicine, Cook County Graduate School of Medicine; Attending Physician and Chief of Tuberculosis Staff, Cook County Hospital; Consultant to the Chicago Municipal Tuberculosis Sanitarium; Attending Physician, University Hospital; Associate Attending Physician, Mount Sinai Hospital, Chicago; In Collaboration with George C. Coe, M.D., Instructor of Medicine, University of Illinois College of Medicine; Associate Physician Cook Co. Hospital; Chinical Assistant, Mount Sinai Hospital, Chicago. 317 pages. Illus. Price, $3.00 cloth. Chicago: Year Book Publishers, Inc., 1941.

BORN THAT WAY. Earl R. Carlson, M.D. 174 pages. Price, $1.75, cloth. New York: John Day Co., 1941.

PHYSIOLOGY IN MODERN MEDICINE—Macleod's. Ninth Edition. Edited by Philip Bard, Professor of Physiology, Johns Hopkins University School of Medicine, with collaborators. 1256 pages. Illus. Price, $10,000, cloth. St. Louis: C. V. Mosby Co., 1941.

AN INTRODUCTION TO DERMATOLOGY. Fourth Edition. Richard L. Sutton, M.D., Sc.D., LL.D., F.R.S. (Edin). Emeritus Professor of Dermatology, University of Kansas School of Medicine; and Richard L. Sutton, Jr., A.M., M.D., L.R.C.P. (Edin). Assistant Professor of Dermatology, University of Kansas School of Medicine. 904 pages. Illus. Price, $9.00, cloth. St. Louis: C. V. Mosby Co., 1941.

ELECTROCARDIOGRAPHY IN PRACTICE. Ashton Graybiel, M.D. Instructor in Medicine, Courses for Graduates, Harvard Medical School; Research Associate, Fatigue Laboratory, Harvard University; Assistant in Medicine, Massachusetts General Hospital; and Paul D. White, M.D. Lecturer in Medicine, Harvard Medical School; Physician, Massachusetts General Hospital in charge of the Cardiac Clinics and Laboratory. 319 pages. Illus. Price, $6.00, cloth. Philadelphia: W. B. Saunders Co., 1941.

THE POISON TRAIL. William F. Boos, M.D. Cloth, 380 pages. Price $3.00. Boston and New York: Hale, Cushman and Flint, 1939.

The author, now seventy, has had an interesting career in medicine and toxicology. He received his A.B. at Harvard in 1894, Ph.D. in Chemistry, Heidelberg, in 1896 and M.D., Harvard, in 1901. Early becoming interested in medicolegal investigations he has served as medical expert and toxicologist for the government since 1908 and has held other important positions in the same connection. He has made many contributions to scientific literature on chemical subjects and subjects relating to internal medicine, occupational poisoning and public health.

This is the author's first book, well and interestingly written for lay consumption. It is practically an autobiography, covering his own experiences with various poison cases and giving much information of value regarding the different poison agents involved. Written almost like a novel it is easily read and highly informative. It especially emphasizes the necessity of keen, systematic and competent investigation in all medico-legal autopsies where poisoning is a possibility.

Equally illuminating are the author's comments on canned foods. In the last fifteen years he states that he has investigated countless charges against the food canning companies, yet in all that time he failed to encounter a single authentic case of food poisoning of any kind traced to commercially canned food and he has yet to hear of one, although the contents of millions of cans are consumed daily throughout the United States.

A book like this should go far to dissipate the ignorance and superstition which has lingered so long in the public mind over the various matters with which it deals.

GILBERT COTTAM.

GRADUATE MEDICAL EDUCATION. Report of the Commission on Graduate Medical Education. 304 pages. Chicago: University of Chicago Press, 1940.

The Commission on Graduate Medical Education was organized for the purpose of formulating the educational problems and principles involved in the medical training of graduates and the adequate development of specialists, whereby they might be kept abreast of new developments in diagnosis, treatment and prevention.

A detailed consideration is given to the training of interns. Suggestions are offered in regard to a desirable length of service, the requirements of a satisfactory service and the various responsibilities of the intern, the hospital authorities and the medical staff of the institution. The general purpose should be a preparation for general practice with this goal in the minds of all those who may participate in the various features of this process. When feasible, or possible, opportunity should be offered for a progression into special fields.

In certain hospitals with adequate teaching facilities and with the opportunities for wider experience, residencies may be established whereby selected students and interns are rendered broader fields for personal development along special lines of work, at the same time utilizing the talents of the applicant for the promotion of better teaching among the interns.

Graduate education among the men in practice is stressed and the plans in various states discussed, pointing out similar and varying features which have proved advantageous. This method of teaching is intended to aid not only those on general practice particularly, but also specialists. It must always be the primary goal to make any course offered attractive in form and variety, topical in its appeal, but also convenient, concise and cognizant of economic expediencies.

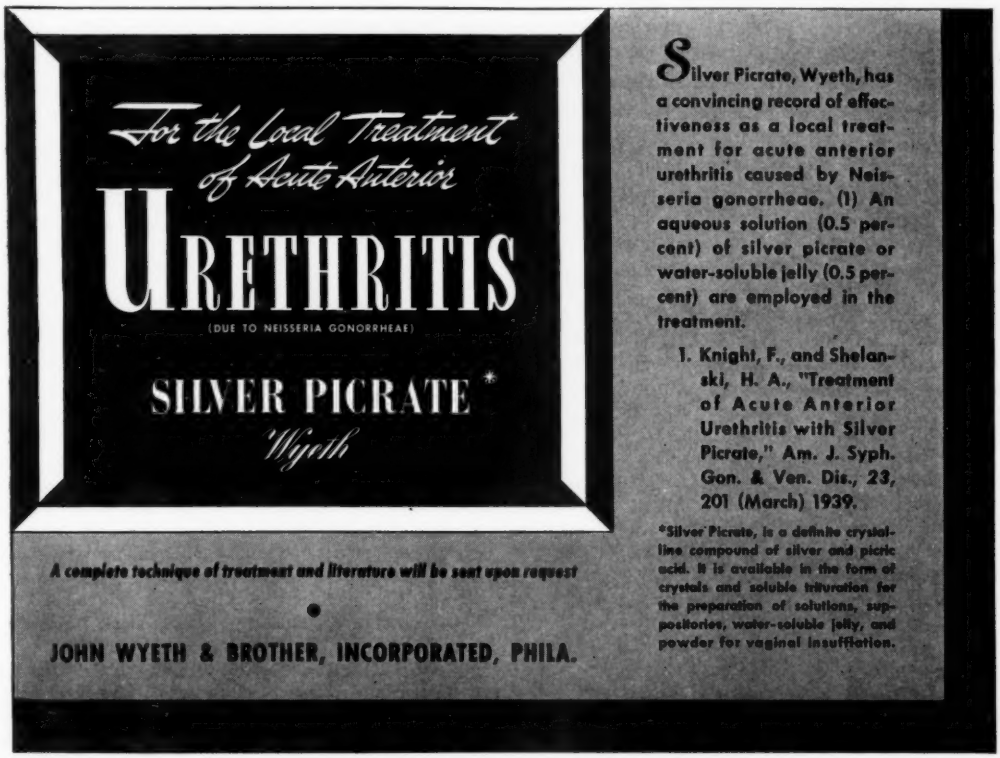
Specialty boards must look to proper allocation of specialists so as to avoid an over-supply in certain areas, as already appears the trend in middle-sized cities. Certification will no doubt become more difficult, but it must be realized that the certification of men already doing special work has been necessarily facilitated, lest retroactive measures prove unjust to the applicant. The boards have already done excellent work and no doubt will continue to do so in withholding recognition from those who are inadequately fitted by training or personality.

Some consideration is given to a discussion of graduate teaching in England and parallels drawn with methods in this country.

The method of graduate instruction as pioneered by the University is quite fully discussed and its attractive features stressed.

For anyone interested in graduate medical education the book supplies much valuable and instructive material, compiled by a commission which has the weight of authority, good judgment and experience.

FRANK J. HIRSCHBOECK, M.D.


For the Local Treatment of Acute Anterior
URETHRITIS
(DUE TO NEISSERIA GONORRHEAE)
SILVER PICRATE *
Wyeth
A complete technique of treatment and literature will be sent upon request
JOHN WYETH & BROTHER, INCORPORATED, PHILA.
Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by Neisseria gonorrheae. (1) An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.
1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph. Gon. & Ven. Dis., 23, 201 (March) 1939.
*Silver Picrate, is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

CANCER IN CHILDHOOD; AND A DISCUSSION OF CERTAIN BENIGN TUMORS. Edited by Harold W. Dargeon, M.D., F.A.A.P., Attending Pediatrician, Memorial Hospital for Cancer and Allied Diseases, New York. 114 pages. 42 Illus. 9 Tables. Price, $2.70. St. Louis: The C. V. Mosby Company, 1940.

The reader of this symposium will ever be alert to become constantly aware of the prevalence of cancer and allied diseases in the infant and the child. The author has well emphasized childhood cancer as one of the important children's diseases.

The author has acknowledged the generous grant received from the estate of the late Elizabeth Edwards, making possible the free distribution of this book to a number of libraries. It is the recommendation of the reviewer that this volume be added to the educational list in the Cancer Movement.

LILLIAN L. NYE, M.D.

CLINICAL DIABETES MELLITUS AND HYPERINSULINISM. Russell M. Wilder, M.D. 459 pages. Illus. Price $6.00. Philadelphia: W. B. Saunders Company, 1940.

The book, Clinical Diabetes Mellitus and Hyperinsulinism by Dr. Russell M. Wilder, is indeed a fine addition to this subject. This book is written in a very readable and understandable style. It should be very welcome to the rank and file of physicians who are called upon to treat diabetes but do not necessarily limit their practice to it.

The development of each chapter in the book is logical. The author begins with a clear delineation of the primary factors that come to play in the maintenance of the normal blood sugar level. In the preface the author states "Purposely omitted from this book is extensive consideration of the theory of carbohydrate metabolism, the physiology of experimental diabetes, and the pathology of diabetes." This premise makes this volume fully a clinician's monograph.

In the exhaustive second chapter diabetes mellitus is defined and the methods for its diagnosis established. The reader has carefully called to his attention certain of the otherwise confusing non-diabetic melliturias. A lucid description and differentiation is made with regard to renal glycosuria (the so-called normoglycemic dextrosuria), alimentary hyperglycemia and diabetes innocens all of which terms have at times provoked much confusion.

Dietary management of the diabetic, diabetic cookery, insulin therapy and the requirements for effective therapy, all receive exhaustive consideration.

In Chapters 10 and 11 the author discusses acidosis and coma in diabetes, as well as infections complicating diabetes. Both of these chapters are highly recommended to the reader because of their orthodox and well tried therapeutic programs that they preach. One would do well to refer over and over to their well chosen words of admonition and advice. Full consideration is given in succeeding chapters to complications of every manner that the diabetic like any non-diabetic may fall heir to.

The last several chapters in the monograph are given over to that interesting subject of hyperinsulinsim. The author is in a unique position to write authoritatively on this important subject because of his extensive and pioneering experience. Adequate discussion is given to the methods necessary to make this diagnosis. Medical and surgical management is presented.

The author on page 19 states, "Those who adhere to the unitarian conception of diabetes, as I do, define this disease as an abnormality of metabolism created by insufficiency of the insular activity of the pancreas. In diabetes the homeostasis of the blood sugar level is permanently disturbed." Dr. Wilder gives a great deal of force and vigor to his unitarian stand. The entire volume reads well and logically. The author has made full use of many footnotes which may prove a bit disturbing to the continuity by some readers because of their newness in medical writings, but certainly serve a most useful purpose. They are much like "stage whispers," fortifying and accentuating the main thought. Many bits of interesting information were placed in these foot notes. Their use was indeed most refreshing. In the foot note on page 68 the author makes an almost prayer-like point when he says, "Another dramatic illustration of the far-reaching influence of the discovery of insulin is provided by the rescuing from premature certain diabetic death of the Nobel Prize Winner, Dr. George Minot. Dr. Minot later was able to contribute importantly to the discovery of the effective treatment of pernicious anemia, and thereby prolonged other valuable lives to add to the sum of values of communal life."

This volume by Dr. Wilder is a highly clinical and exhaustive treatment of the subject of diabetes and hyperinsulinism which will be found extremely acceptable.

SIMON G. SAX, M.D.

AS I REMEMBER HIM. Hans Zinnser. Price $3.50. Boston: Little, Brown and Company, 1940.

We venture to predict that this delightful volume will be recorded among the best of the year.

Purporting to be the life and thoughts of another, it is in fact the autobiography of a physician. The many entertaining anecdotes make it easy reading, but there is interspersed throughout the book evidence of deep thought.

After reading the book one wishes he could have known the author.

C. B. D.

DON'T EAT BREAD. Allen Klein, Ph.G. 116 pages. Price, cloth, $1.00. Emmaus, Pa.: Rodale Press, 1939.

The Greeks had a word for it, "diatribe," a wearing away of time. Intended primarily for reading by the layman, this little volume by specific statement as well as implication charges the cereal grains wheat, rye and corn with direct or contributory causation of an astonishing number of the human ailments and infirmities to be found listed in any standard medical dictionary between the extremes of ā a ā disease and Z.Z.'Z." The author modestly states: "This book offers irrefutable proof, based on medical authority, that *wheat and some of the other grain cereals* are the causes of undernutrition, obesity, and a host of present-day ills." The major premise remains unsupported even after reading the text.

M. McC. FISCHER, M.D.